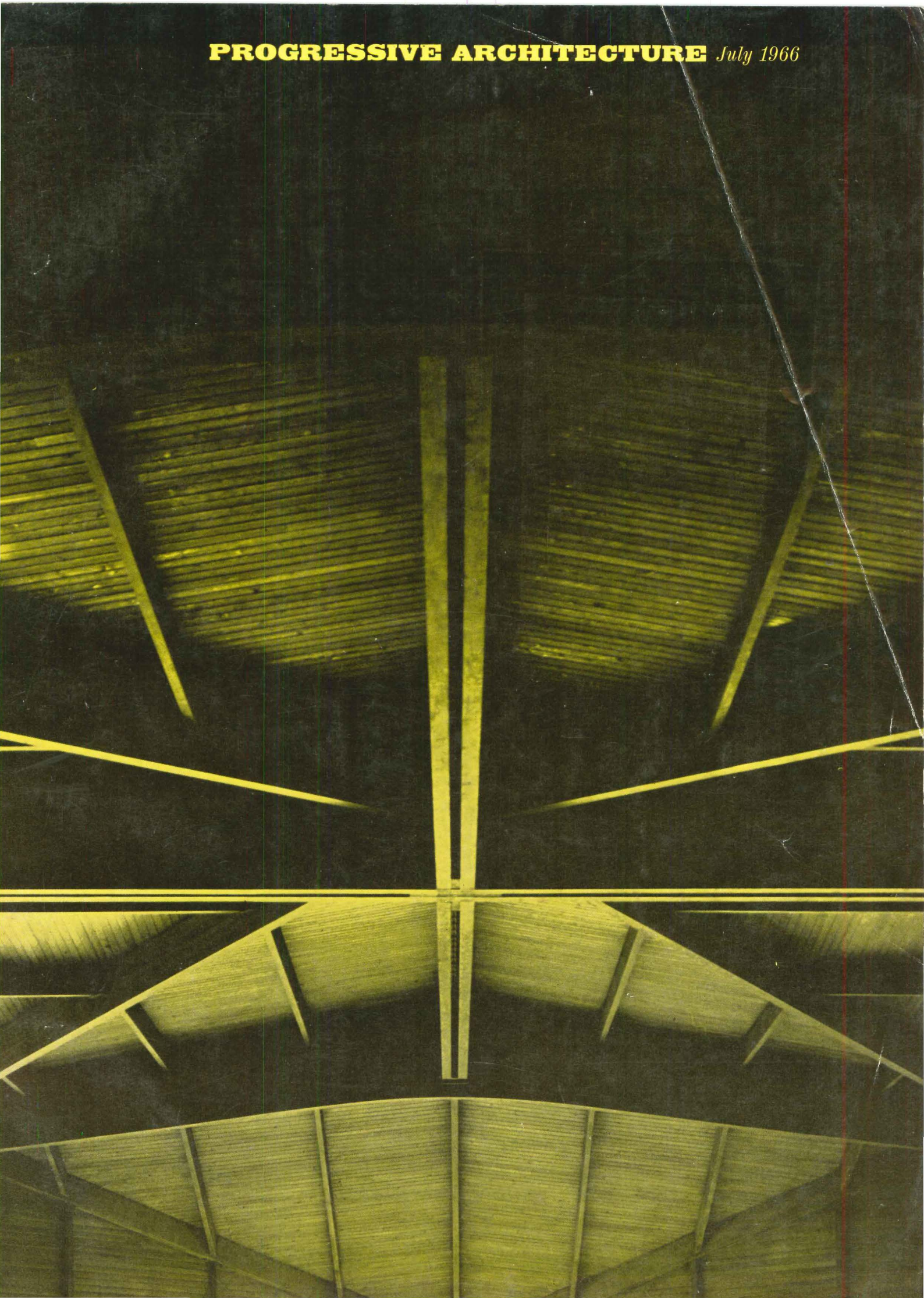
PROGRESSIVE ARCHITECTURE *July 1966*



Installation: Hillcrest North Medical Center, San Diego, California

Architect: Deems-Martin Associates, San Diego, California

Floor shown: V-366 Bellezza

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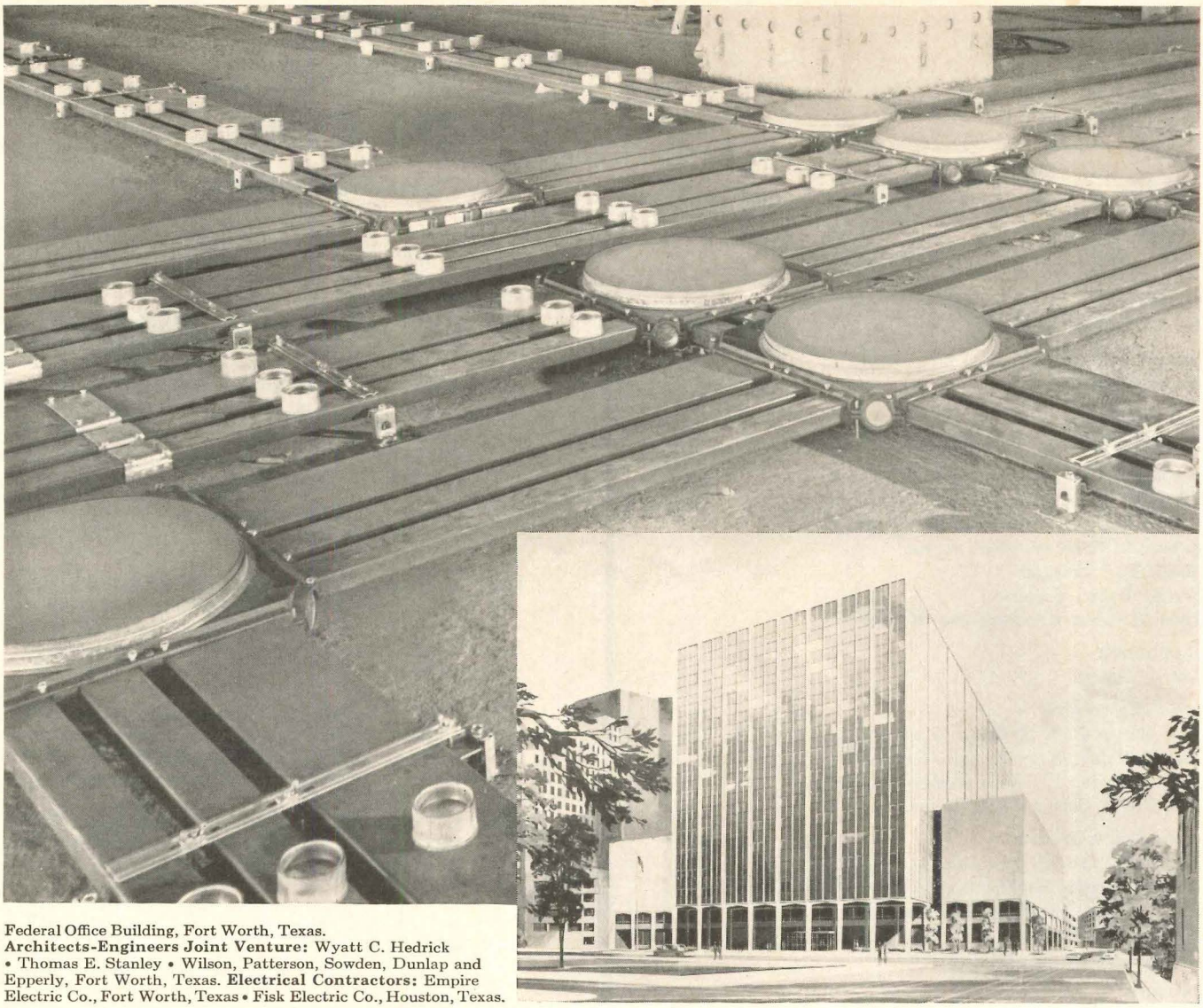

Federal Office Building, Fort Worth, Texas.
Architects-Engineers Joint Venture: Wyatt C. Hedrick • Thomas E. Stanley • Wilson, Patterson, Sowden, Dunlap and Epperly, Fort Worth, Texas. **Electrical Contractors:** Empire Electric Co., Fort Worth, Texas • Fisk Electric Co., Houston, Texas.

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THIS MONTH IN P/A

Progressive Architecture® *July 1966*

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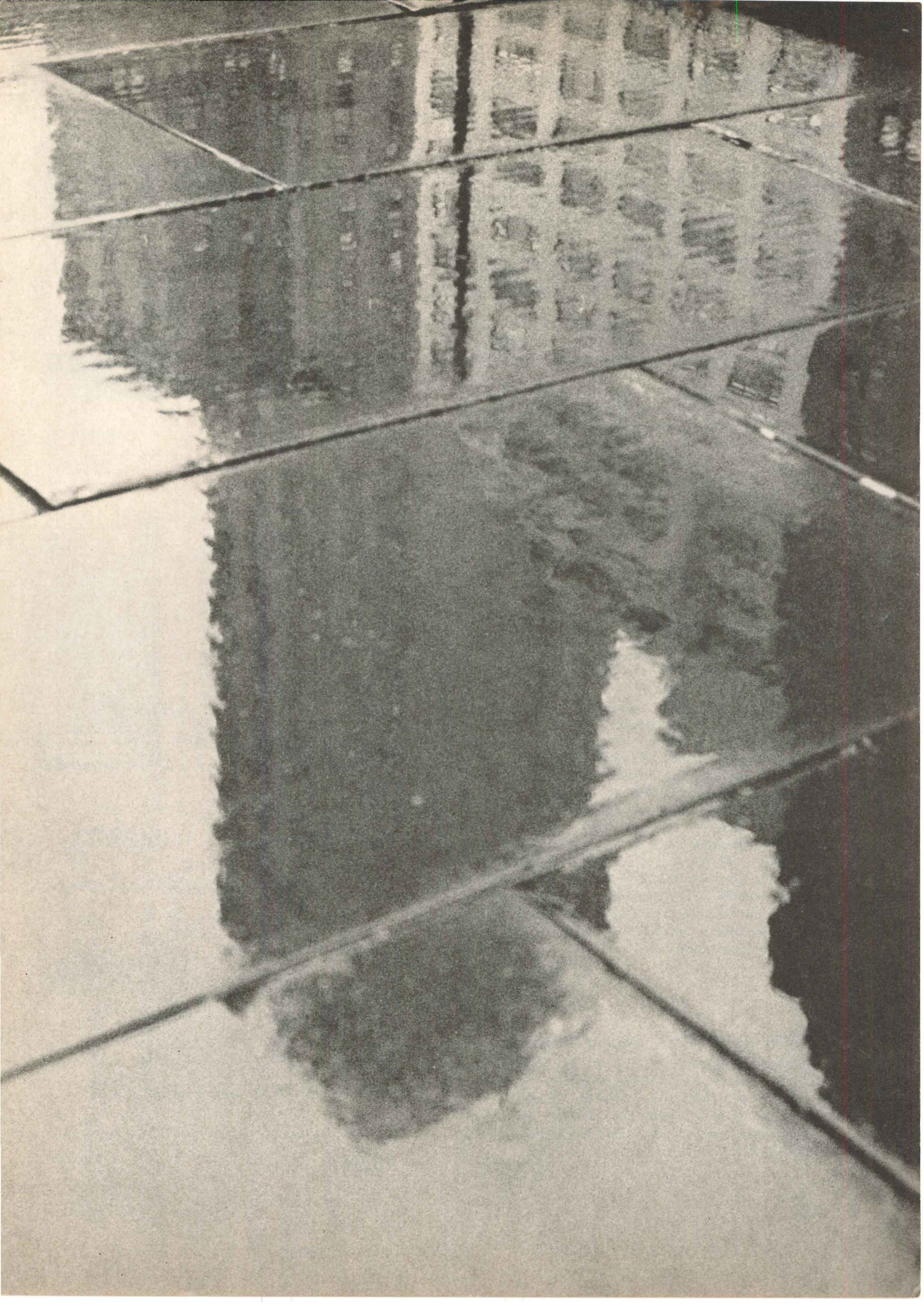


VIEWS

Trivia and Such

Dear Editor: Your item listing movies whose main characters were architects preoccupied me longer than anything else in the JANUARY 1966 P/A. Here are some you forgot.

In *Twelve Angry Men,* architect Henry Fonda persuaded a roomful of potential clients to acquit an accused murderer, thus gaining another possible client.

That well-muscled Japanese in *Hiroshima, Mon Amour* was an architect, I believe. The actor who played him is unknown to me, but I can still vividly see his vaccination mark before my eyes.

In *For Whom The Bell Tolls,* Gary Cooper explains at one point that he first came to Europe to study architecture. Of course he is not yet registered when he dies, so this may not count.

I think a case can be made for *The Ten Commandments.* Moses, wittily played by Charleton Heston, functions during the early part of the film as a pyramid builder. The pharaoh's chief architect (a bit player), supervising construction, can't get an obelisk into position. Moses engineers a strategy that snaps the obelisk into place without breakage. If he can't be considered an architect for doing this, then I certainly believe that Moses should be remembered as the most prominent sidewalk superintendent of all time.

NATHAN SILVER
Cambridge, England

Dear Editor: Since my name was associated with the text which appeared in the APRIL 1966 P/A on the dormitory building at Harvey Court and Peterhouse, Cambridge University, please allow me to clear up some misapprehensions your readers might have formed.

In finding a new place for my Team 10 Mars Group quotation (p. 158), you confused Team 10 (Colin St. John Wilson is *not* a member of the group, which is Bakema, van Eyck, Candilis, Woods, the Smithsons, etc.) with the A 10, the road from London to Cambridge. Sandy Wilson's Mars A 10 group sounded very hip and switched-on, and I can just see him tearing up to meetings in his green Aston Martin. Unfortunately, it doesn't exist.

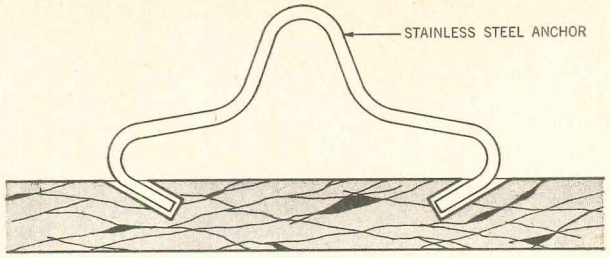
All the "neo-Brutalist" stuff in the article sounds like it came from J. M. Richards of the British *Architectural Review,* along with that other quotation (p. 156). I don't think that a stylistic approach makes for much of a critical analysis (in the first place, as used in the article, that's not what style means) in terms of British—or, for that matter, any current—architecture.

NATHAN SILVER
Cambridge, England

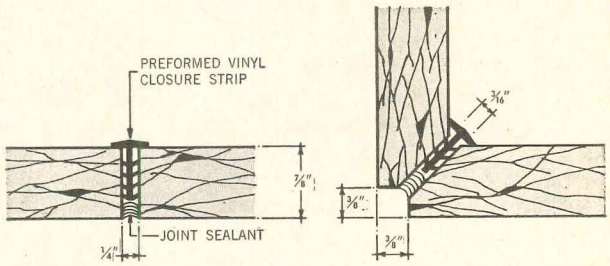
Prickly Mountain: Some Swinging Reactions

Dear Editor: Dave Sellers (on top of Tim Prentice, to boot) is indeed an original—I knew him at Yale—but *surely* even he didn't call Rudolph and Saarinen "Randolph and Saroyan," as you have quoted him on page 154 (MAY 1966 P/A). On second thought, perhaps he did. (For shame —to one of you.)

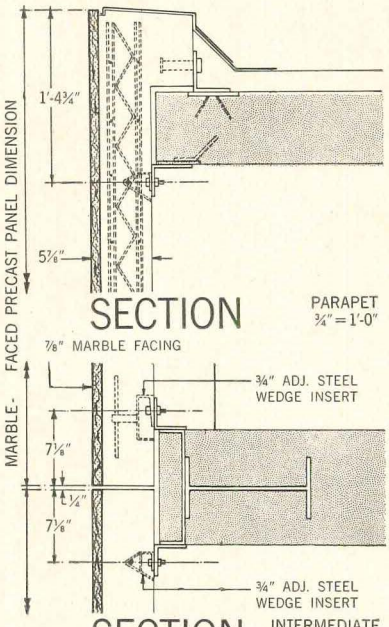
CINDY CISLER
Philadelphia, Pa.



TYPICAL ANCHOR — MARBLE-FACING HALF FULL SIZE

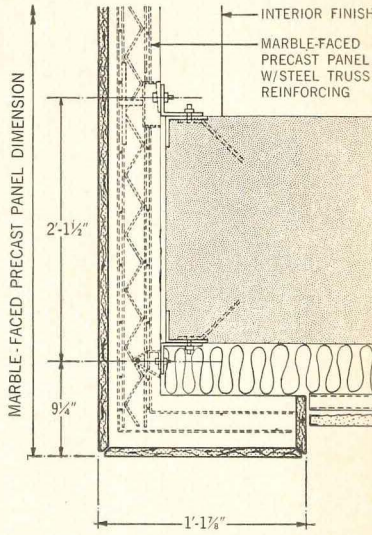


TYPICAL JOINTS — MARBLE-FACING HALF FULL SIZE

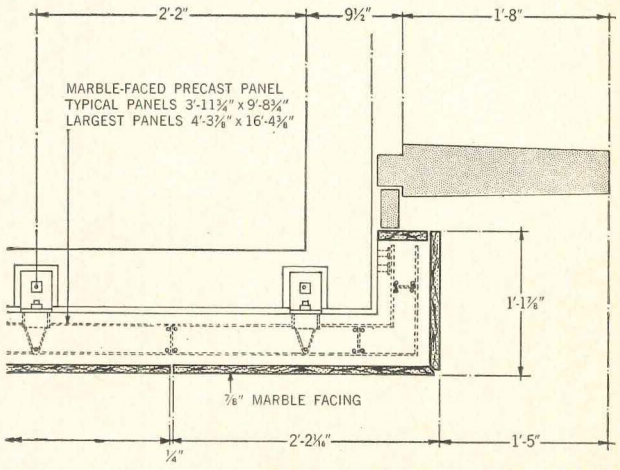


SECTION — PARAPET ¾"=1'-0"

SECTION — INTERMEDIATE ¾"=1'-0"



SECTION — SOFF ¾"=1'-



PLAN — END PANEL ¾"=1'-0"

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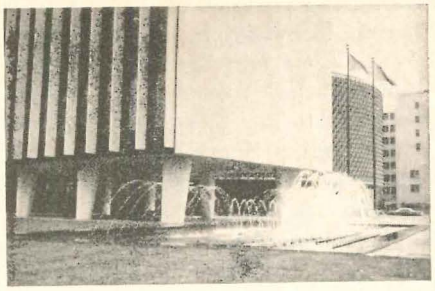

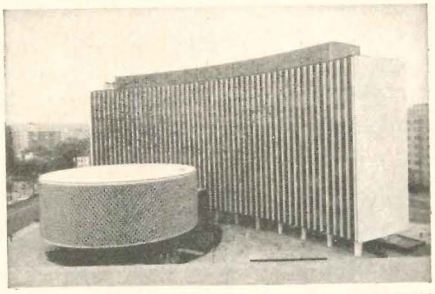

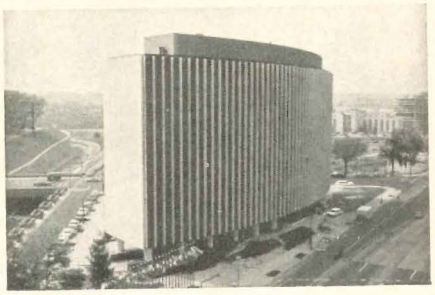

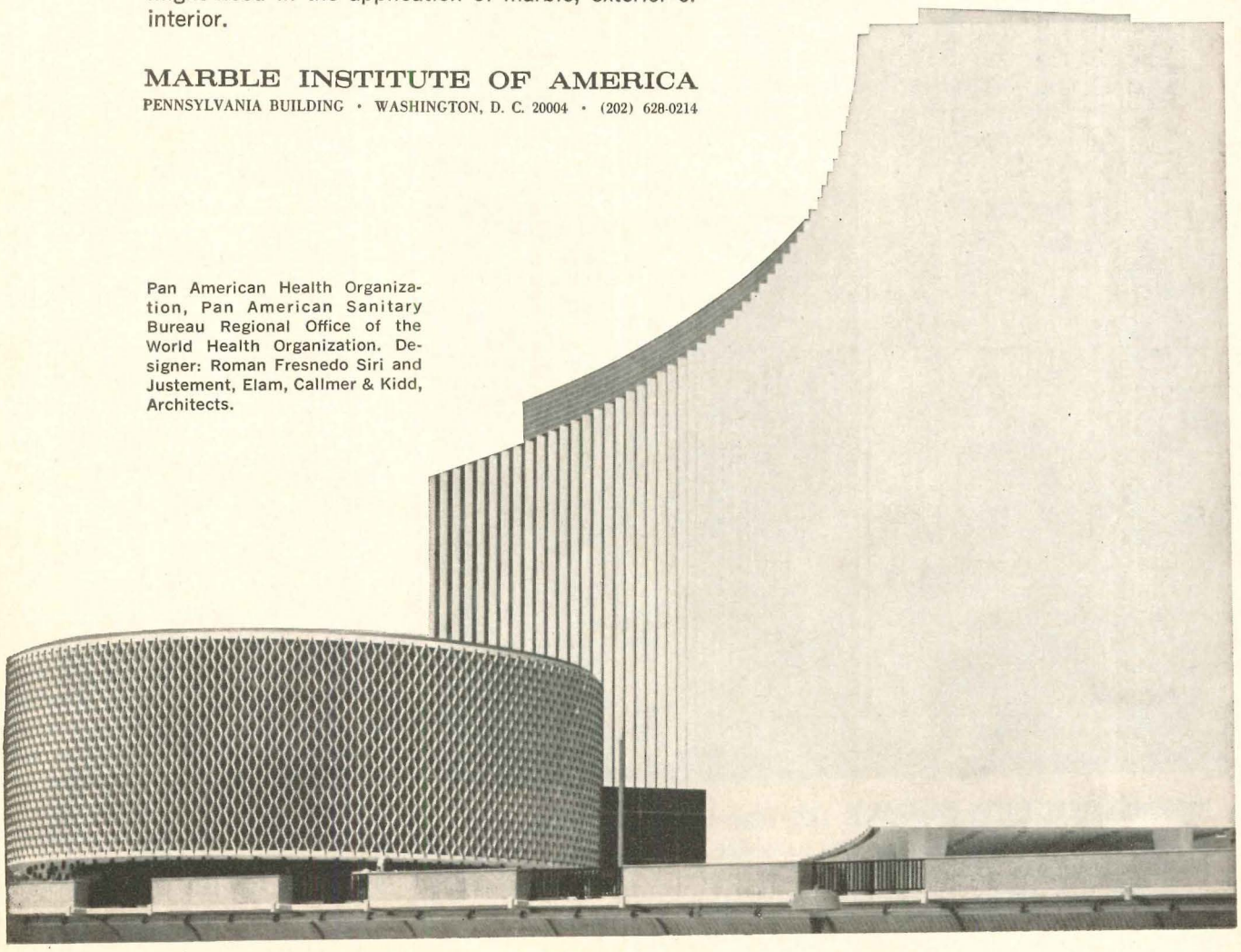

Pan American Health Organization, Pan American Sanitary Bureau Regional Office of the World Health Organization. Designer: Roman Fresnedo Siri and Justement, Elam, Callmer & Kidd, Architects.

On Readers' Service Card, circle No. 423

Dear Editor: Regarding your article on Prickly Mountain: Is it only a few, or do all young men just out of Yale design split (or sprouting) pyramid type buildings; or are these particular buildings the result of an honest effort to take advantage of and enhance a peculiarly unusual and beautiful site?

As Robert Mutrux so aptly stated in his article "Apologia Pro Edificio Suo" (DECEMBER 1965 P/A), today's architect is not satisfied with the silent statement of his work, but he must provide in addition a gratuitous outline of the philosophy that inspired it so the public can carry away the intellectual message of the building without having to decide through the medium of their own senses.

I have applied this theory to Prickly Mountain and examined the buildings on the basis of the drawings and photographs only, ignoring the prose. I am left perplexed and with some serious questions—which, I guess could only be answered by a further libretto from the architects:

(1) Can the client (the Wall Street broker, for instance) express himself as an individual in this house? Was a real effort made to provide for *his* needs so that he can relax and enjoy life?

(2) Wouldn't these buildings be better sited nestled into a busy Los Angeles suburb rather than a peaceful Vermont mountain? (Maybe there aren't any peaceful mountains left.)

(3) Is it essential that every ski house be a whimsical pile of lumber exploding into the view of the valley below or is it possible to design a few simple buildings that take advantage of the site in a straight-forward, unpretentious way for the guy who just wants to enjoy the wonders of Vermont?

Unlike the typical speculator, who has few capabilities other than a healthy need for personal gain, these young speculators have a unique opportunity not available to most. (How many have a checkbook, 600 acres of Vermont, unlimited exuberance, imagination, *plus clients*?) So I hope their buildings get simpler and simpler (I have no doubt that they will) and I hope they can manage to beat off the clients running up the mountains with their fists stuffed full of cash.

ROBERT M. FLEMING
Wilton, Conn.

The May Issue: Some General Comments

Dear Editor: The MAY 1966 P/A deserves compliments from several aspects. The graphics, photographs, and layout were on a very high level.

I would particularly like to comment on the excellent full color charts and maps and on the color photograph on page 133, which I consider an outstanding architectural photograph.

JAMES E. BURLAGE
Lexington, Mass.

Dear Editor: Re the May issue: What a mouthful of housing. It is good to see it aired and in such a diversified fashion.

In the NEWS REPORT, P/A comments: "If the volume of low-cost housing is appallingly slight, its architectural quality is abysmal." The term "low cost" as applied to public housing is a misnomer. It takes well over $20,000 to produce an average public housing apartment with two bedrooms and a bath on slum cleared land. A reference to $10,000 or $12,000 per housing unit is just that much hogwash. Let's get the Government statistician to tell us what part of of the ensemble is not included in his figures, and P/A's characterization of "abysmal" can refer not only to the architectural quality but to the presentation of cost facts as well.

Why then, one may justifiably ask,

Continued on page 14

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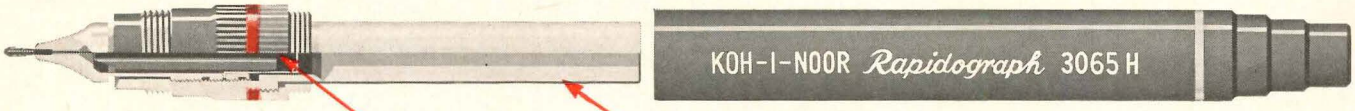

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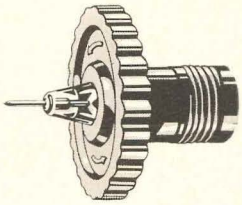

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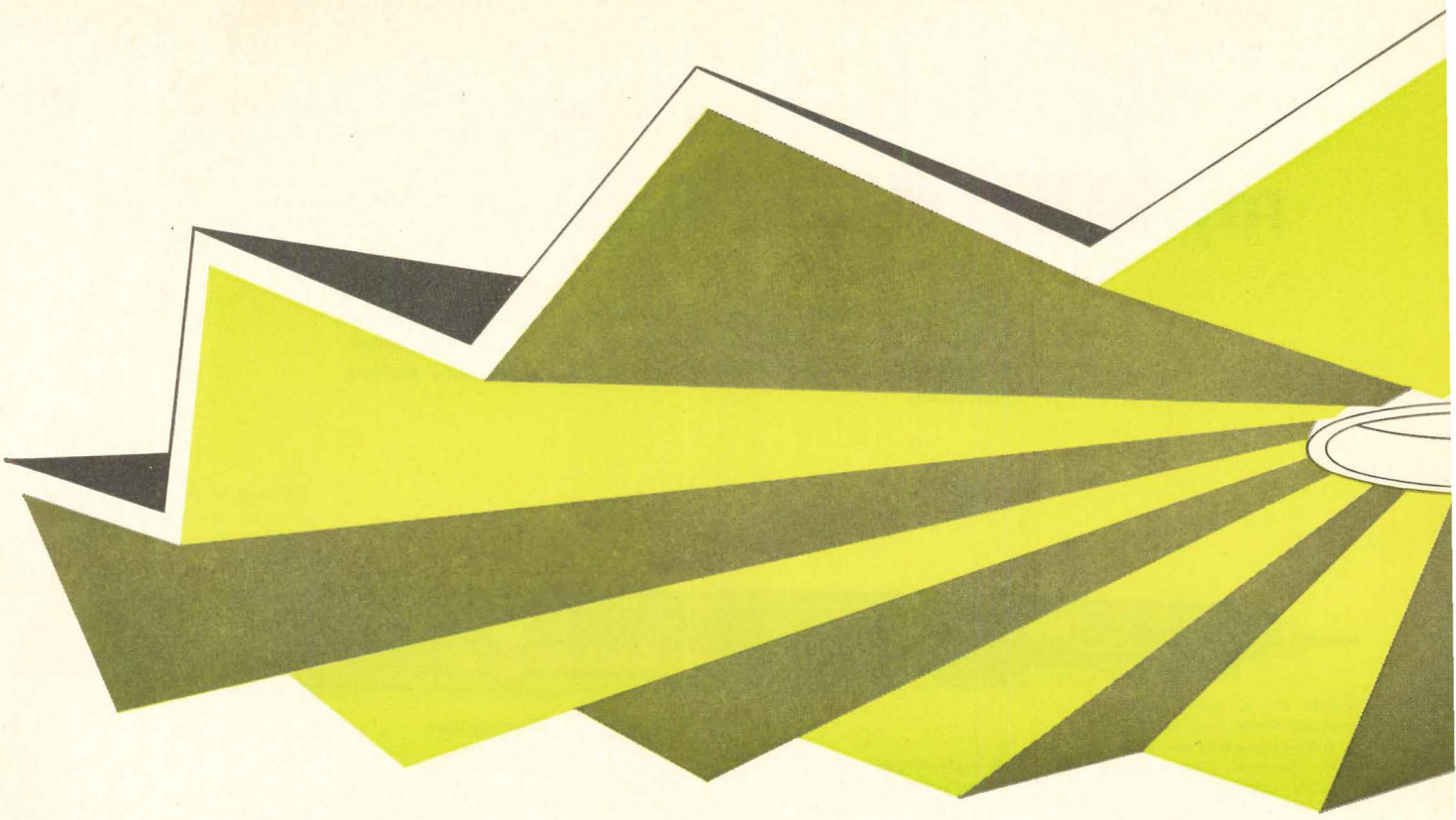
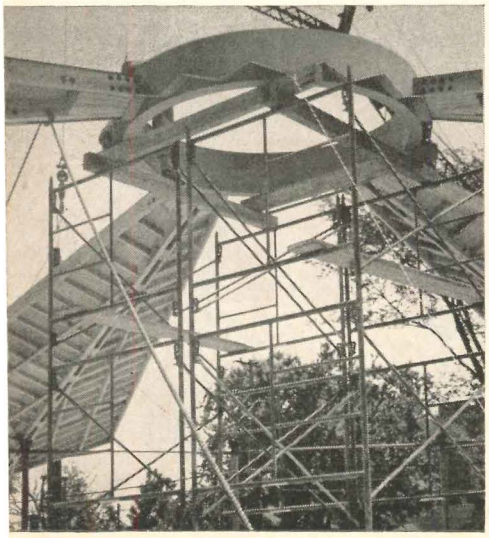
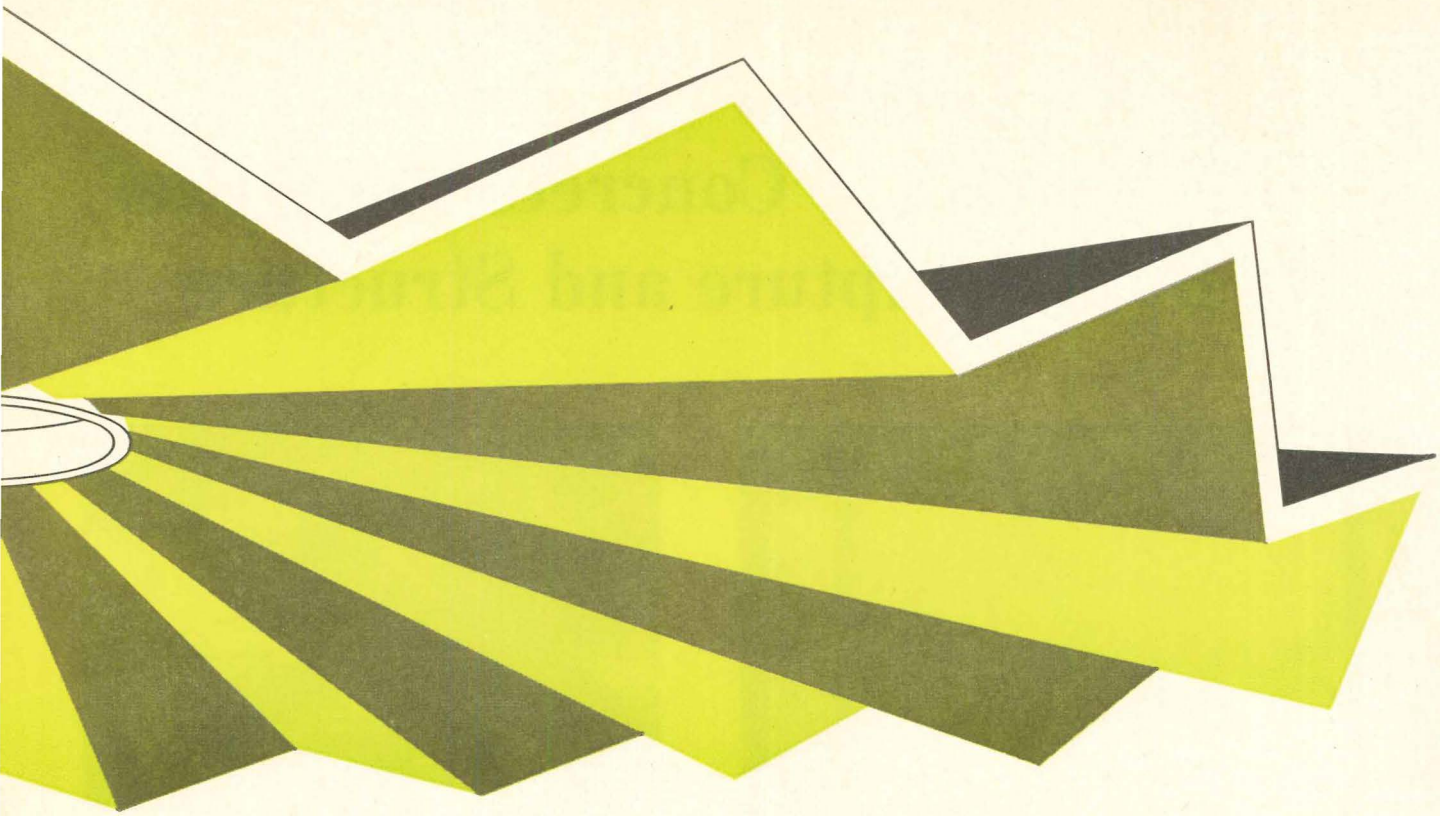


the most exciting ideas take shape in plywood





Whirlpool Employees Credit Union Building, St. Joseph, Mich./Edward R. Duffield, Architect/Holland Construction Co., Contractor/Plywood Components Corp., Fabricator

The jaunty cap on this glass-walled office building is a plywood radial folded plate. Its use here proves the versatility of the design idea, more often seen in the august context of churches and public buildings. This plywood roof cost less than any alternative and went up faster. Besides saving money, radial folded plates give large clear-span interiors because no center supports are needed. For more about this and other time-saving, high-strength plywood building systems, send for the new, free booklet "Plywood Construction Systems." We're at Tacoma, Wash. 98401 (USA only).

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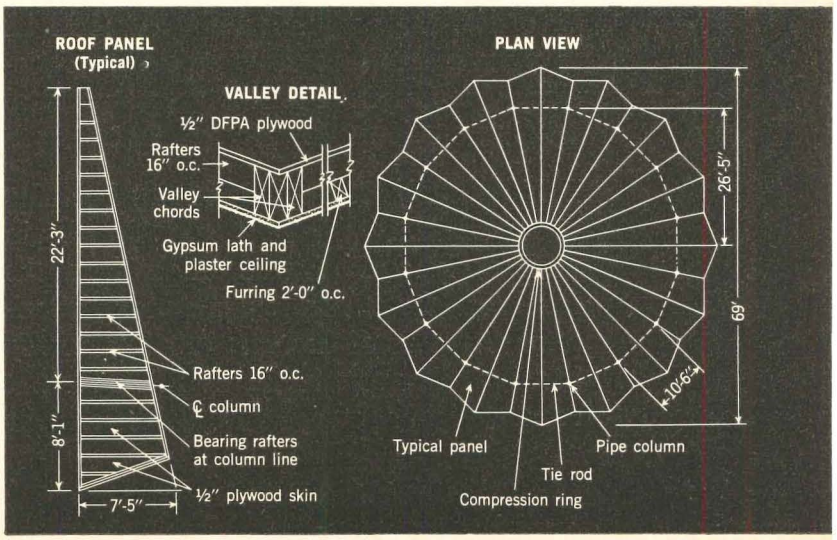

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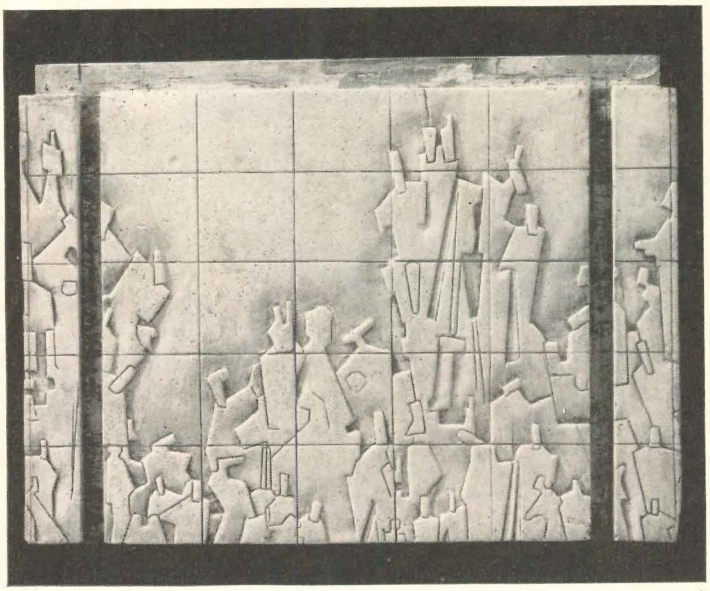

Sculptor's scale model of entire end-wall of building. Relief moulds were made by transferring large line drawings to 60′ x 12′ sheets of foamed polystyrene. Forms were cut with saws and heated knives; then finished by carving, grinding and texturing.

Panels vary from 9′ x 12′ to 17′ x 12′ and are 6″ thick. Chattahoochee stone and special sand were used as aggregates to produce shades of brown and tan. Carved sections of foamed polystyrene were laid in 6″ steel forms and concrete with the necessary reinforcing steel placed over them. When moulds are stripped, the polystyrene is destroyed.

200 precast wall panels made with Lehigh Cements

The exterior of this seven story, all concrete building is both artistic and functional. Each of the 200 precast panels has a portion of the overall design cast into its face. In addition to their decorative function, the panels constitute the structural walls.

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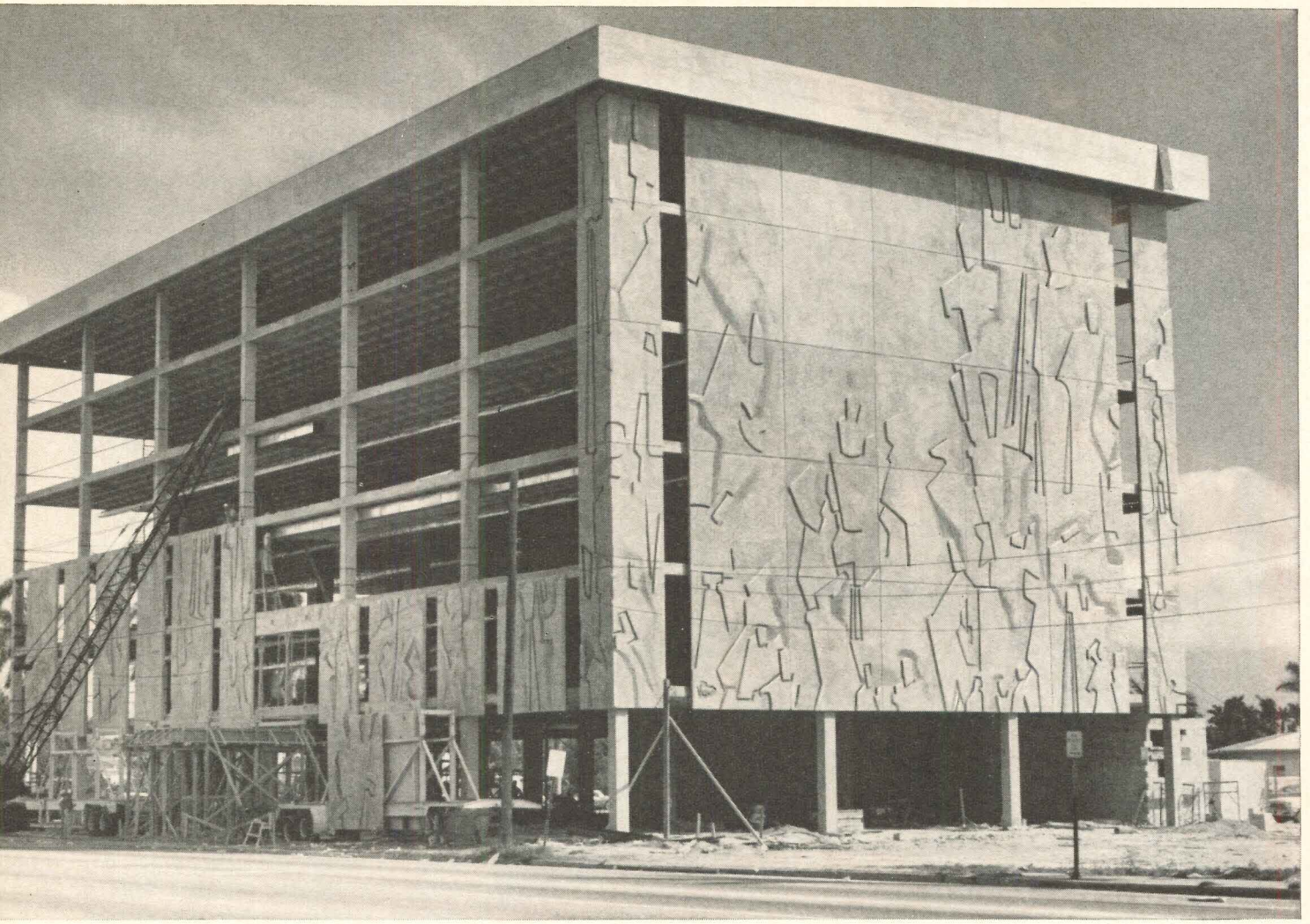
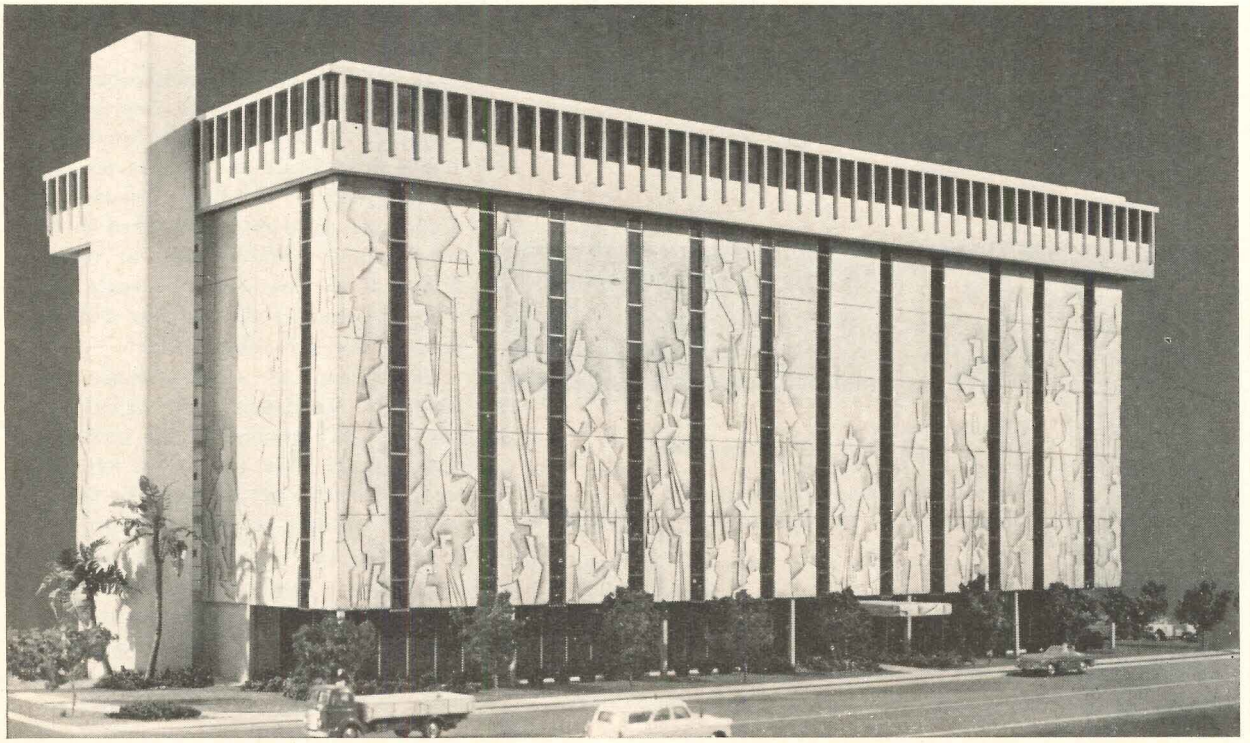
LEHIGH CEMENTS

Architect: Herbert H. Johnson Associates, Miami, Fla.
Builder: Burk Builders, Inc., Miami, Fla.
Sculptor: Albert Vrana, Miami, Fla.
Precaster: Concrete Structures, Inc., Miami, Fla.



Panels are placed by crane and fastened to cast-in-place concrete frame in precise order required to form the continuous bas-relief face. Availability of units in proper order and at proper time was extremely important to smooth construction of the building.

New Professional Arts Building in Miami, Fla. used 23,000 sq. ft. of non-repetitive wall panels to produce the unusual bas-relief exterior.



Continued from page 8

do public housing projects, with such high costs per unit, produce (with some rare exceptions) such miserable results? The categorical and incontrovertible answer is that public housing—Federal, state, and city—is drenched to a point of saturation with dirty politics, inefficient governmental bureaucracy, incompetent professionals, and a greedy construction industry.

Again in the NEWS REPORT, we read about "rehabilitation (of old tenements) that goes through the roof" with 8-ft square holes from roof to basement into which prefabricated bathrooms and kitchens are hoisted within 48 hours and at a terrific saving in cost. A high-ranking HUD official, on a recent TV show, called it "a major breakthrough." If truth be known, this is a huge hoax perpetrated on a gullible public. It is a case either of a lack of *savoir faire* or simply chicanery that plays with human misery.

I can confirm the suspicion voiced in your Editorial that the current rage of cluster housing is caused by a desire "for a massive architectural expression" rather than "a serious analysis of what is the preferred way of life." I can vouch for the introduction of open corridors and balconies in multistory public housing as an attempt to improve design (?) rather than enhance livability. Same is true of poured concrete for exterior wall finish, Messrs. R.F. Kennedy, S.F. Boden, and P. Goodman notwithstanding. Any expert with one iota of objectivity would admit that the exterior treatment of the Chatham Towers is a miserable failure. It's brutal, unaesthetic, and uneconomical.

As to "Ecological Architecture"—a term bandied around with ever greater frequency—as exemplified by Sea Ranch on the West Coast, its creators say that in the design of buildings "behavior of winds over obstacles was studied to determine most suitable angle of roofs." If that is so, how come the roofs face every direction of the compass and not that of the prevailing winds?

One group of condominiums was labeled by Sea Ranch's sales department the "prisons" because of its stark appearance and plain, windowless wall surfaces. Is it necessary for the sales people to point out such an obvious truism?

The interiors require "a special kind of buyer; a bachelor or a childless couple, since many families have objected to the lack of privacy." Those who would accept such layouts however, might develop an "ability to perceive and assimilate the delights and complexities of

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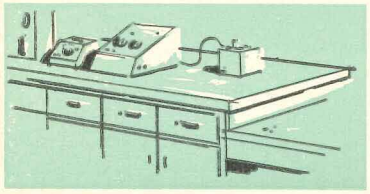
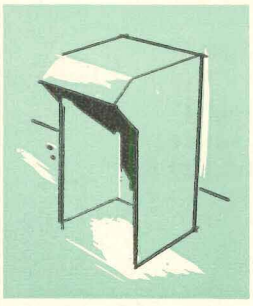
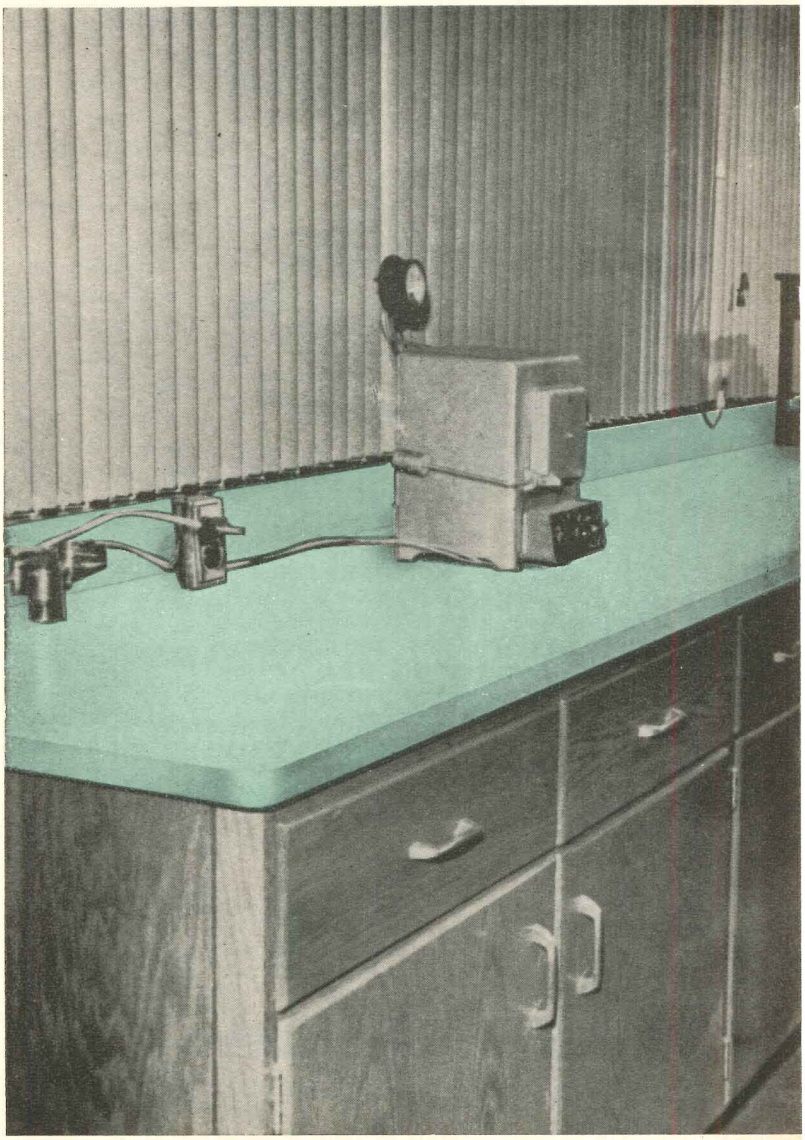


Quality-Control Laboratory Counter Tops



Fume Hood and Table Top



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an untheoretical world." This is double-talk and unadultered nonense.

To the photographer of the large colored shot (p. 133), showing one of the condominiums silhouetted against a deep blue ocean and a lighter blue sky, my sincere compliments. It portrays a splendid play of shapes and lights and shadows, but it is not housing for comfortable living; it's a whimsy.

As to "Architecture Swings Like A Pendulum Do," I rejoice that it is located in the rugged mountains of Vermont, where the aberrations of Reineke and Sellers cannot be readily seen or found. It is quite obvious that Yale's School of Architecture either spurns disciplines, rhyme and reason, or that a couple of "lumbering mountaineers" perhaps just broke loose and went totally berserk.

If this is so, let me point out that they are not alone in this world. Music, dance, theater, painting, sculpture, drama are likewise afflicted with an undisciplined wave of monstrous work pointing toward chaos, anarchy, and ultimate self-destruction. It is existentialism at its worst.

As to the Reston, Va., article: My congratulations to Maude Dorr for a splendid analysis. It's about time that someone in the architectural world pointed out deficient as well as creditable work.

From my observation on the spot, I would call Reston a Potemkin town, full of theatricalities and histrionics.

For a town that was planned in advance "as a controlled architectural environment" and with coordinating designers on the job, the place looks terribly disjointed. It is not possible to have variety, yet be harmonious?

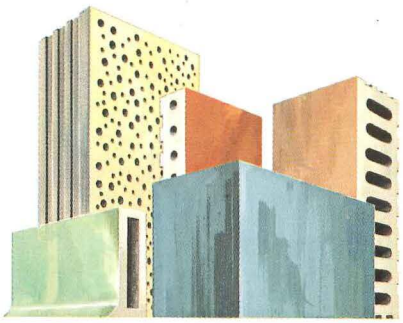
Most homes at the Village Center have five levels each: Does that make for comfortable living? And the affectations of the jagged façades are hardly good looking or conducive to a serene atmosphere.

The 18-Century Italian grouping is so out of joint with the Village Center that one would have a most difficult time discovering what the functions of the planning coordinators were.

And as to the third group, *à la* Holiday Inn motels in color, it is gratifying that it cannot be seen from the Village Center at all. One could hardly think of a more discordant component.

A camel is supposedly a horse designed by a committee of architects. If any one needs proof of that, a visit to Reston would do it.

Architecture is sick because it is in-



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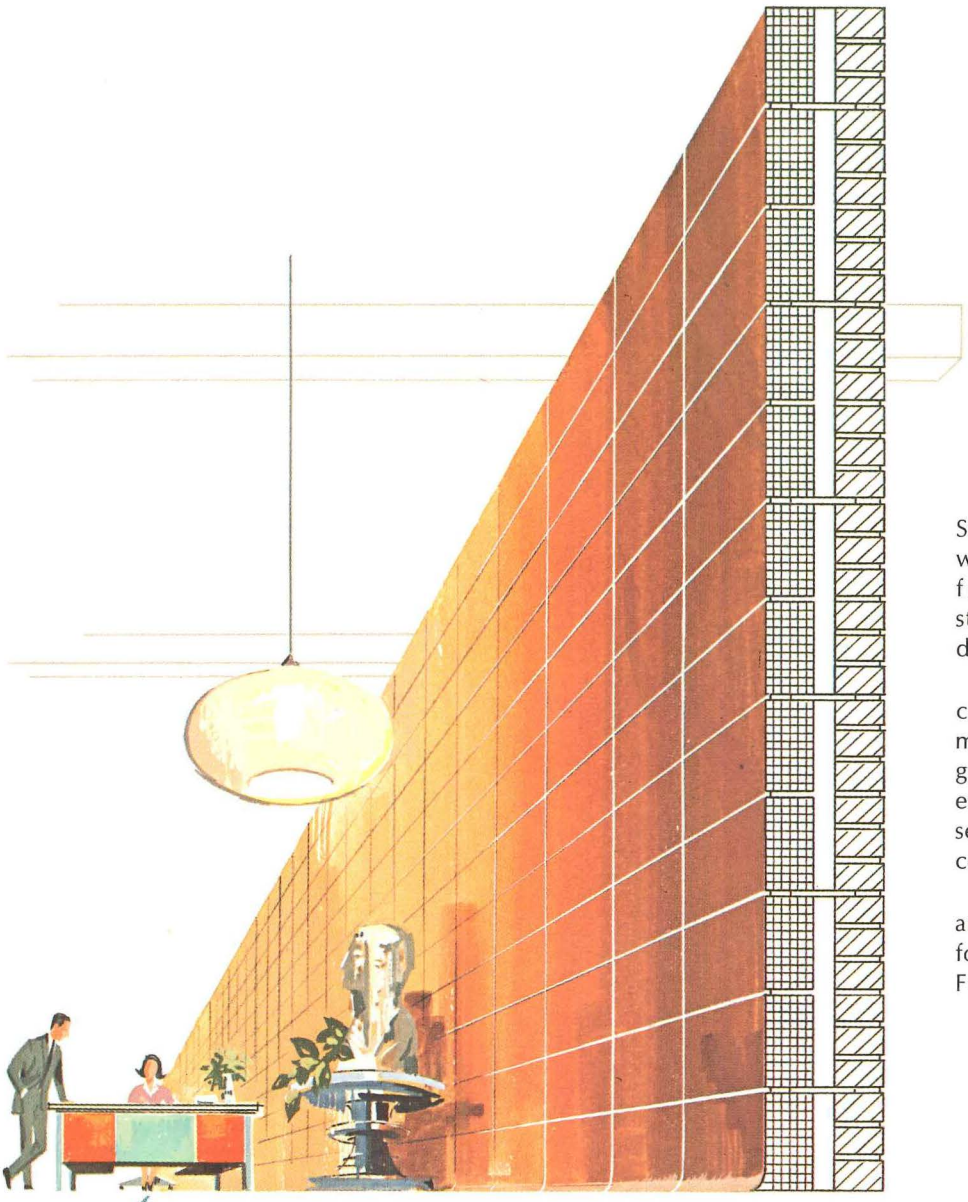

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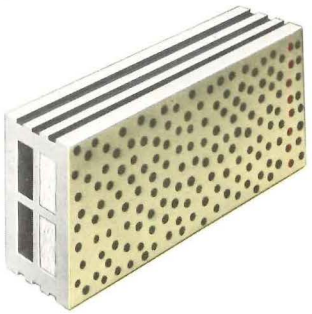

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fested by prima donnas and/or incompetents trying to leave their footprints on the sands of time. And, to quote James Branch Cabell, "While it is well enough [to do so], it is even more important to make sure [that] they point in a commendable direction."

JOSHUA D. LOWENFISH
New York, N. Y.

A Toast from Mobilia

Dear Editor: Your IDD article in the MARCH 1966 P/A ("Down for Decoration; Upping the Nature of Materials") is intelligent and beautiful. I have ordered reprints of the article for some Danish architects, who, like Svend Erik Moller, Aagaard Andersen, and myself, have been enthusiastic about it. May I add that all members of the editorial staff very much appreciate your magazine.

G. BRATVOLD
Mobilia Magazine,
Snekkersten, Denmark

Out of the Picture

Dear Editor: It is a well-known fact that newspapers carefully give credit to a photographer who spent five minutes snapping a picture, while the architect, who spent several years creating the structure, is forgotten. But when "Progressive Architecture" (which, until today, I regarded as America's leading architectural publication) follows the same format, well, come now—isn't this carrying things a bit too far?

I am referring to your publication of our design for the National Presbyterian Church (p. 72, APRIL 1966 P/A). It seems to us it would not have taken much effort to find out who the architects were.

You have at least taken one step in the proper direction by listing photographers' names in small print at the sides of photos, where they are vaguely legible to any one curious enough to turn the page. Somebody else, not me.

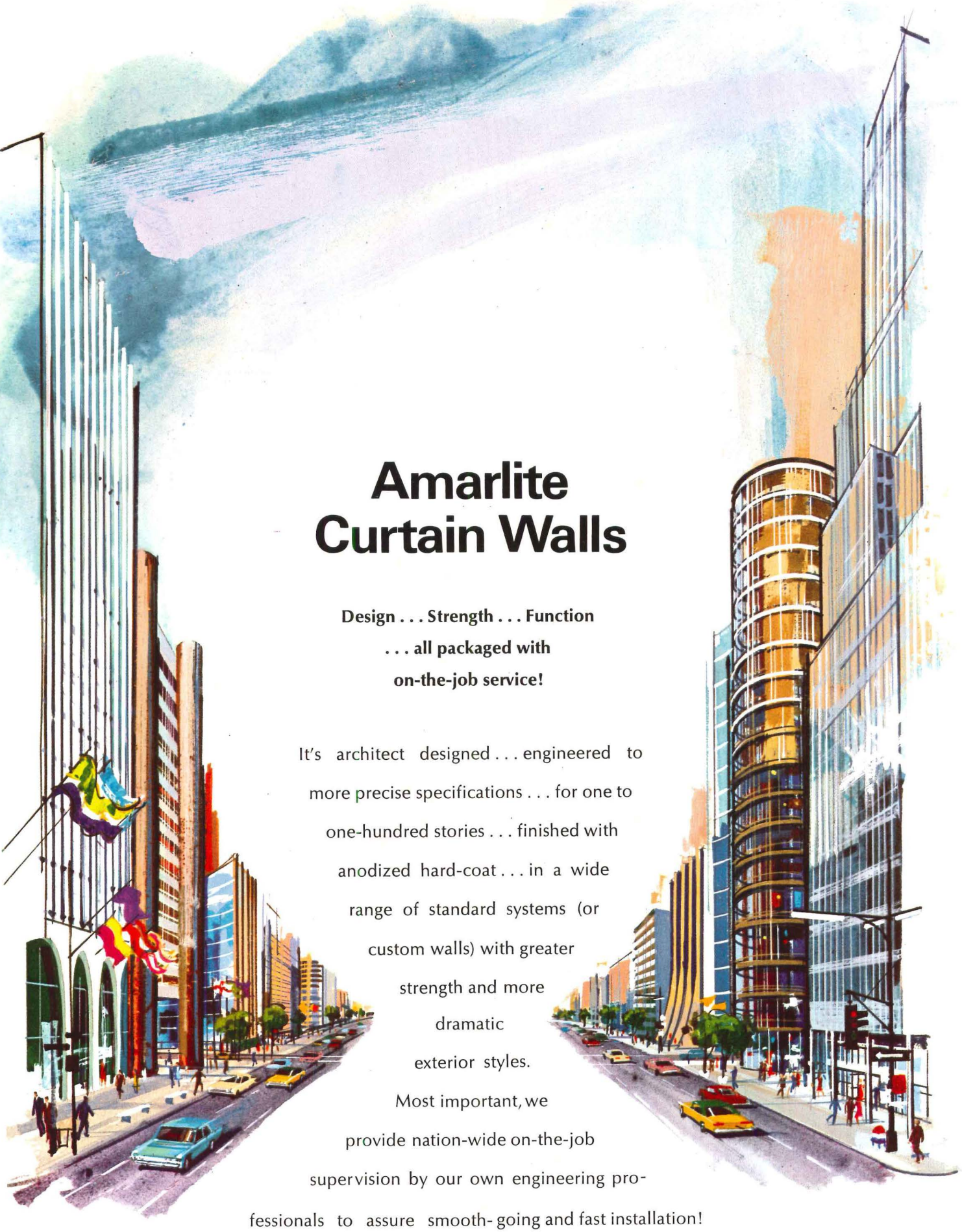
Sic semper photographus! Vive Architects!

HAROLD E. WAGONER
Philadelphia, Pa.

Planners Protest P/A's Stand On Vest-Pocket Parks

Dear Editor: The MARCH 1966 P/A carried an article called "Parks Are Not For Planners." As professional planners employed by the New York City Planning Department (one of us is teacher in the Pratt Institute Graduate City Planning Department), and being intimately involved in the vest-pocket park

Continued on page 24



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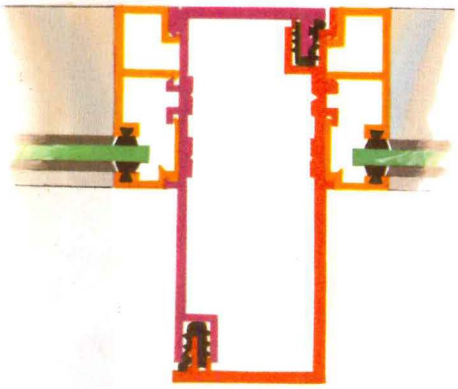

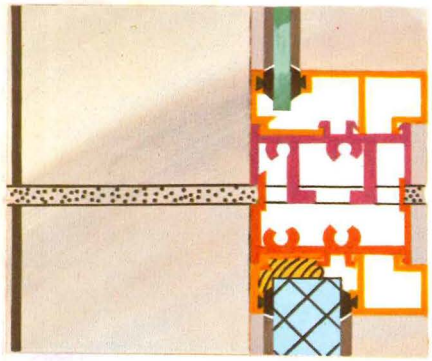

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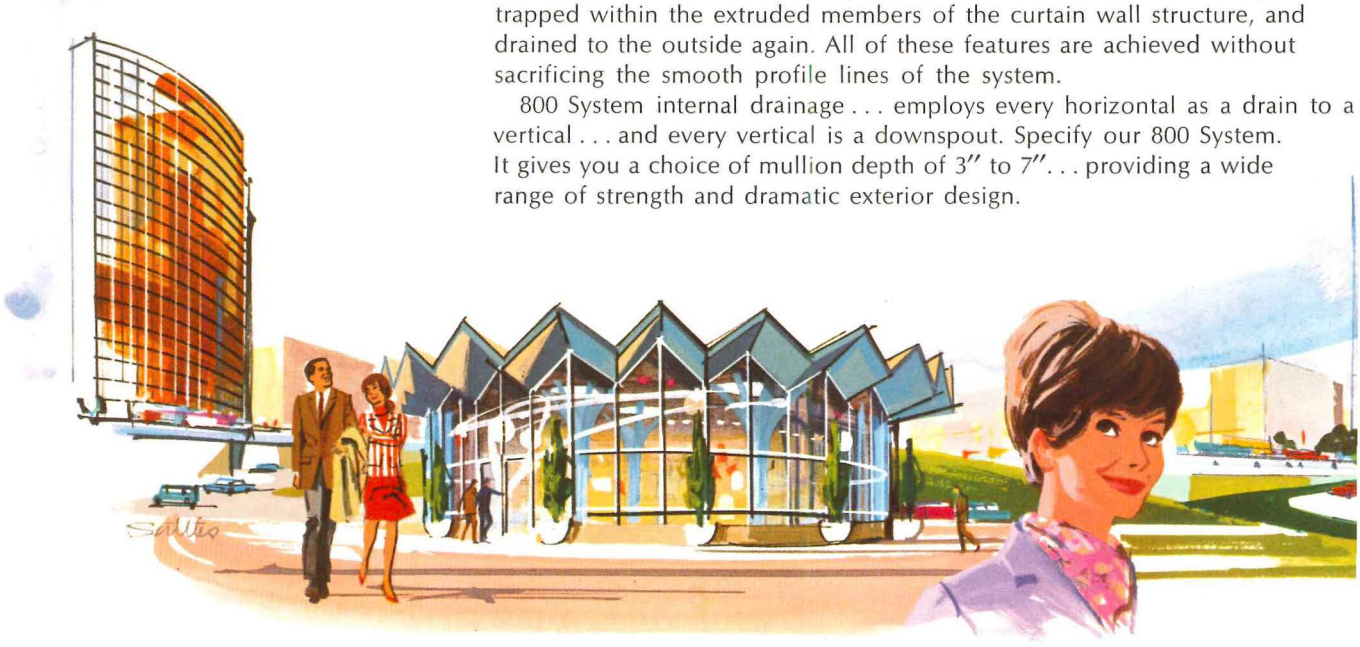

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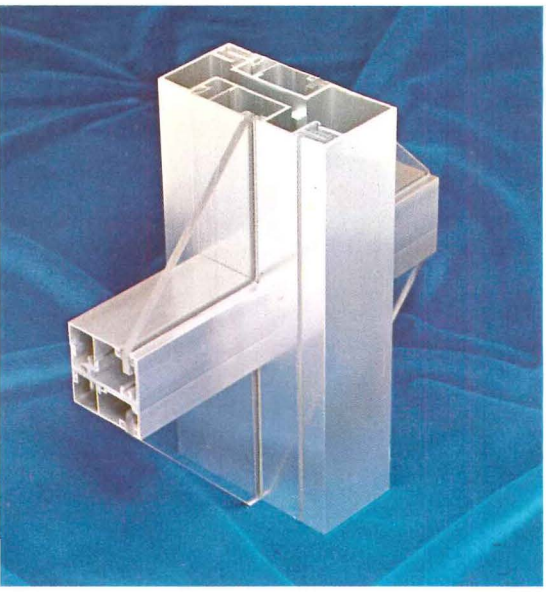

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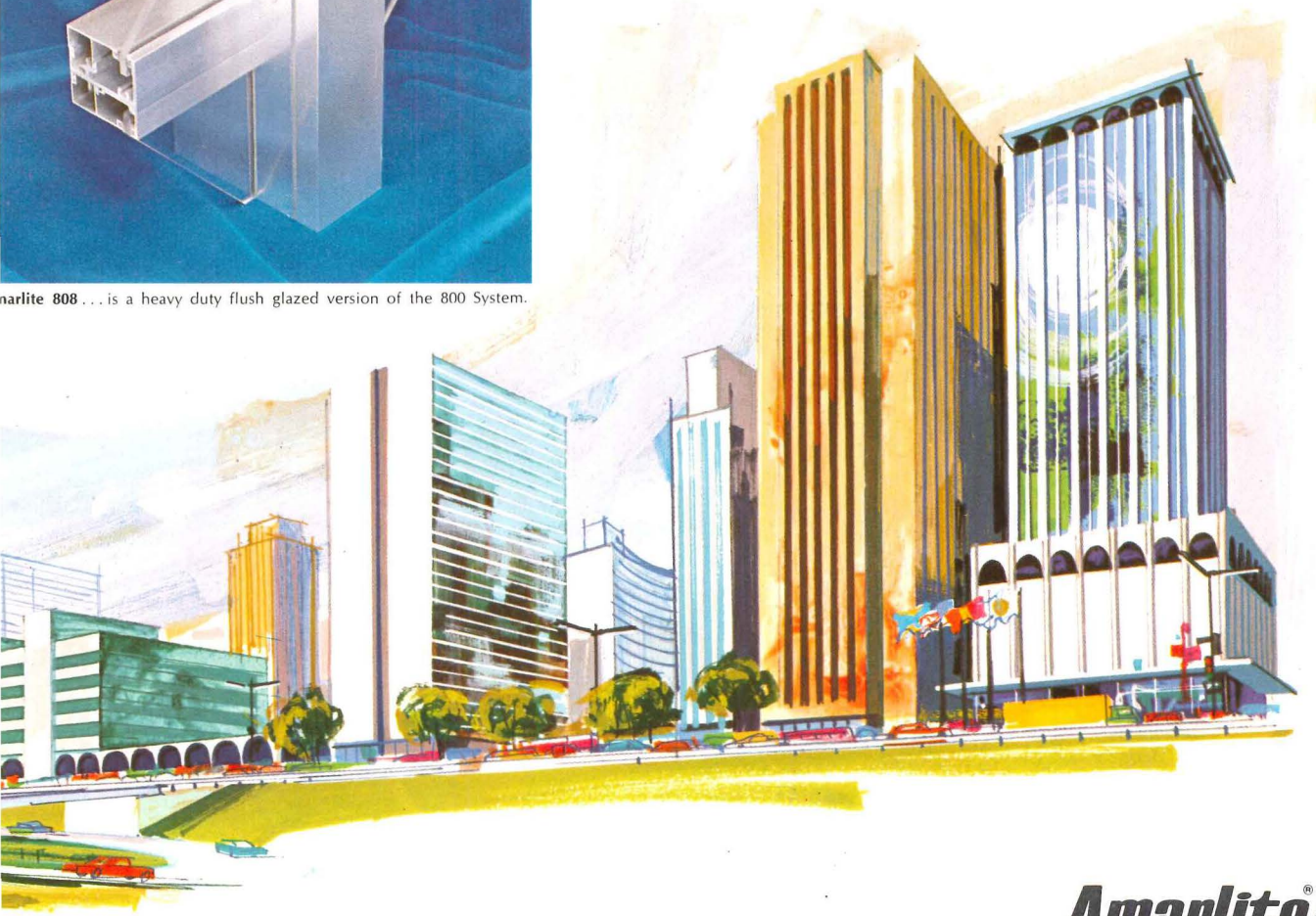

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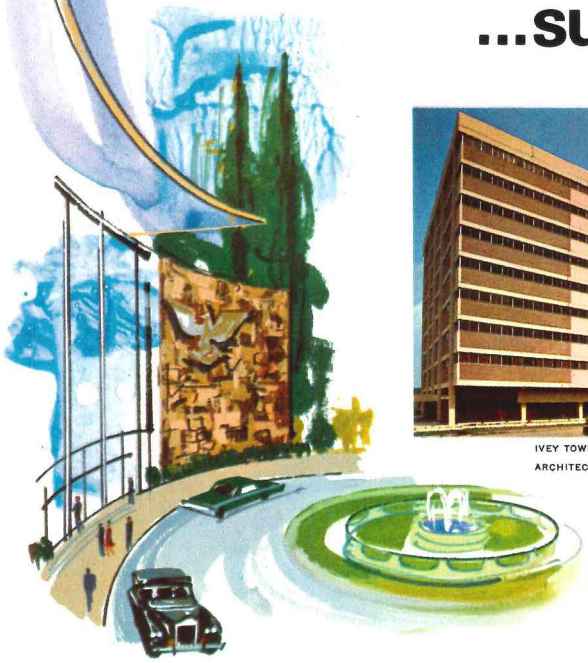

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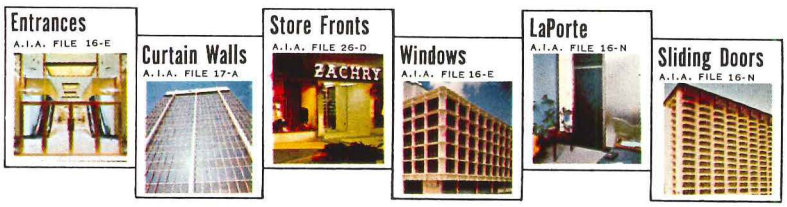

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Continued from page 18

program in New York City, we deplore the evident lack of knowledge and the gratuitous lambasting of the planning profession.

Anyone connected with parks in New York City (including those quoted or mentioned in the article) knows that without the strenuous efforts of Commissioner Elinor Guggenheimer of the New York City Planning Commission, there would not be a vest-pocket park in Bedford Stuyvesant, or in many other places in the city. Commissioner Guggenheimer involved City Planning and many other departments such as Parks, Sanitation, Real Estate and Highways, in an effort to create vest-pocket parks, and a number now exist only through her devotion to this idea. The possibilities of vest-pocket park creation were made known by her to the Bedford-Stuyvesant community, and she was instrumental in the realization of these possibilities. The support furnished by the Central Brooklyn Coordinating Council and Pratt Institute was vital, but in all respects this was a cooperative effort in which the much-maligned planning function was directly and effectively involved.

In your article, you bring up the idea of a related and connected series of small parks running through a community as if this were a totally new concept. There is much to be said for the idea in any community in the city. It may interest you to know that the concept was specifically promulgated by the City Planning Commission about 10 years ago in its study of the West Side Urban Renewal area in Manhattan.

Planners are often condemned, sometimes rightly, for what they do or do not do. It is shameful to find them attacked when they have been, in fact, responsible in good measure for an accomplishment being praised. Commissioner Guggenheimer and the city agencies involved should be receiving a note of thanks and not an article of uninformed calumniation.

FRED ROSENBERG
EDWIN FRIEDMAN, Director,
Division of Operations Planning
City Planning Commission
New York, N. Y.

Stimulating Editorial

Dear Editor: Your Editorial in the MARCH 1966 P/A is very stimulating. It seems regrettable that architects must involve themselves in theological discussions. Your reference to the "God Is Dead" movement, however, brings up a point that probably should be discussed among those of us who *are* involved in shaping the forms for worship.

The fact is that God has always been dead to those who do not know Him, but very much alive and a part of the daily process of living to those who *do* know Him. The Bible provides some very clean-cut answers to those who are willing to accept it as truth. The teachings of Christ have not changed. The methods of communicating may have changed, but the message is the same; therefore, our structures cannot change theology. They can only change the environment through which this theology is communicated.

The basic theology of the Christian must come from the inspired teachings of Christ—there, I make no apology for using the Holy Book as a point of reference. Christ taught that the Sabbath was made for man, not man for the Sabbath. The form of worship must meet the spiritual needs of the worshiper; thus the function must assume priority over the architectural form. The worship requirement must dictate the shape of the building.

JOSEPH R. COLEMAN
Tulsa, Okla.

Continued on page 30

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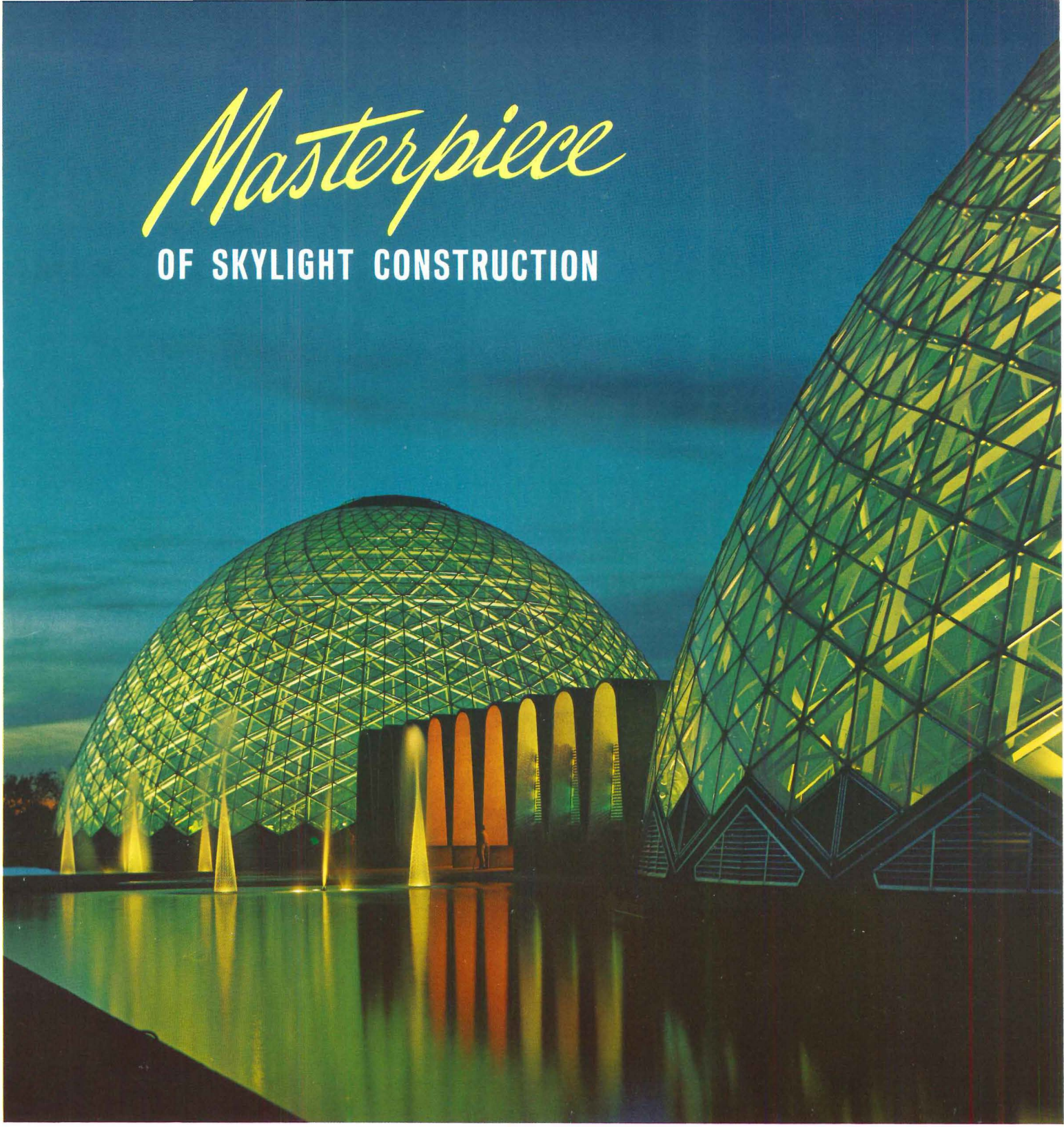

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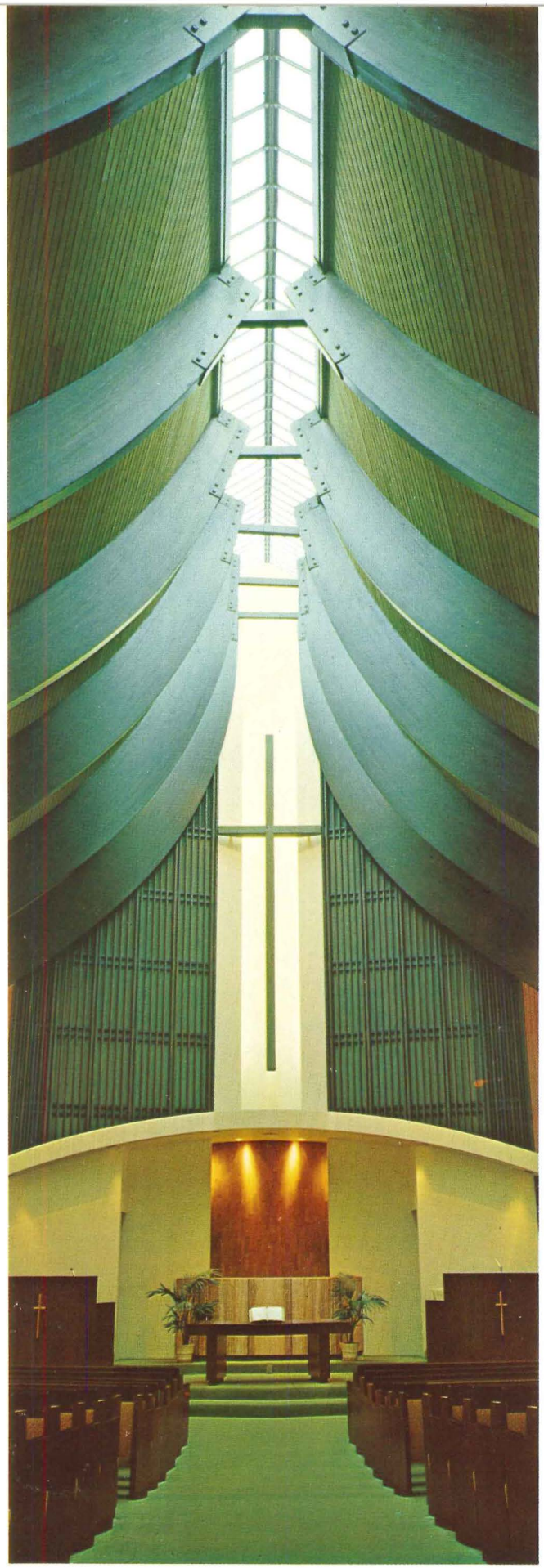

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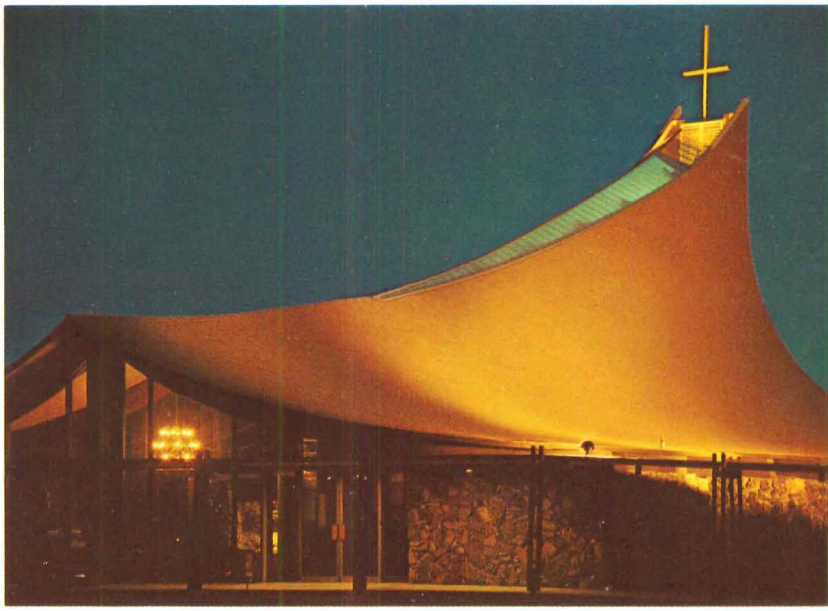

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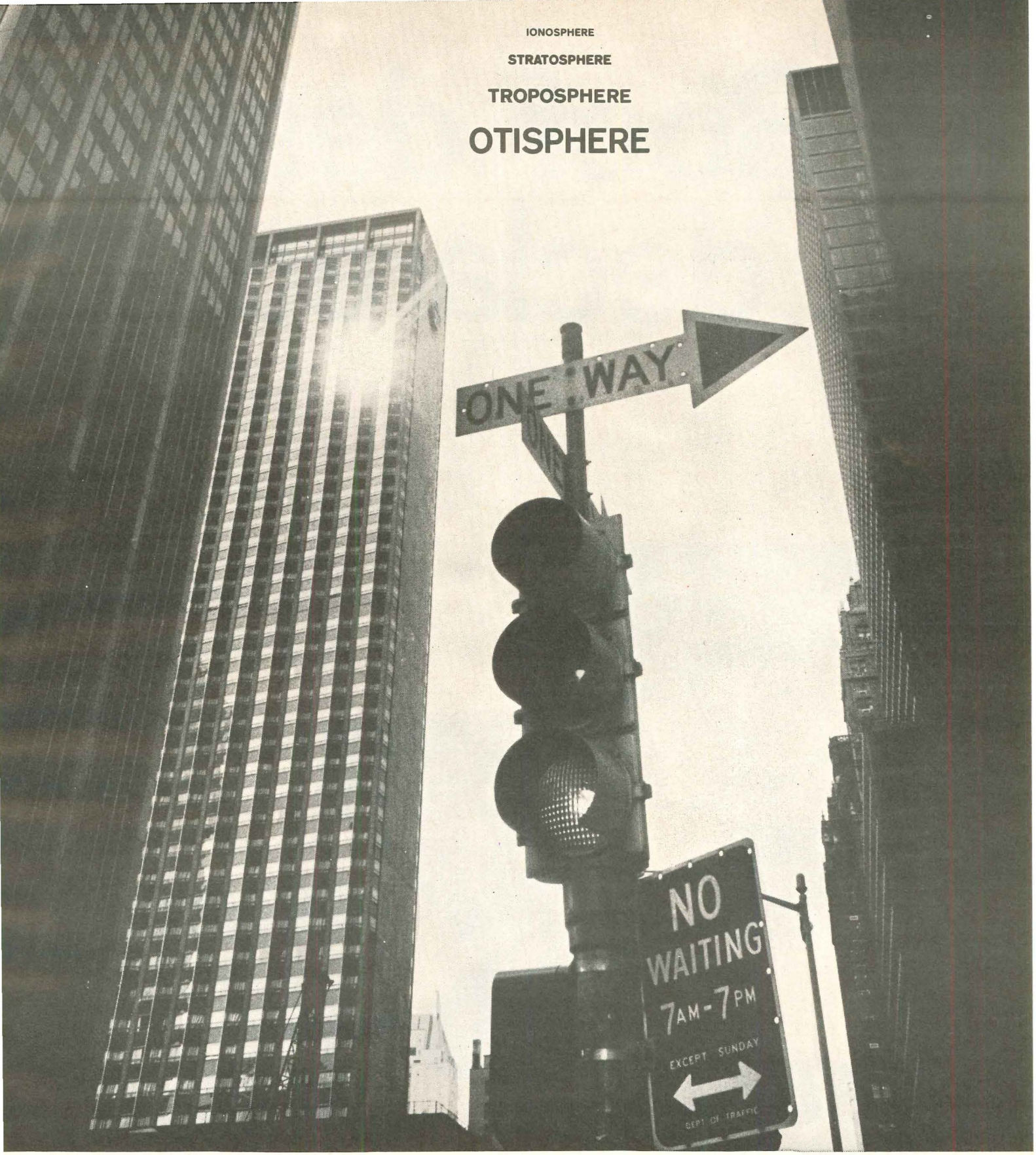

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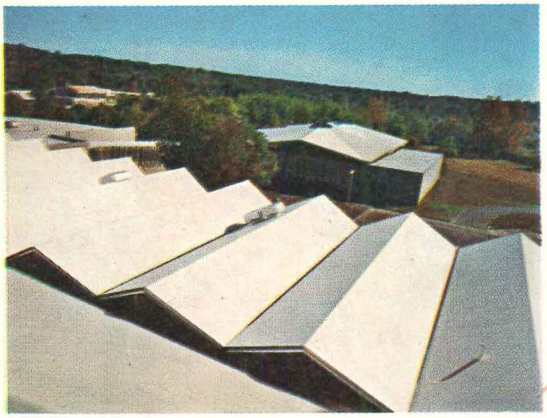

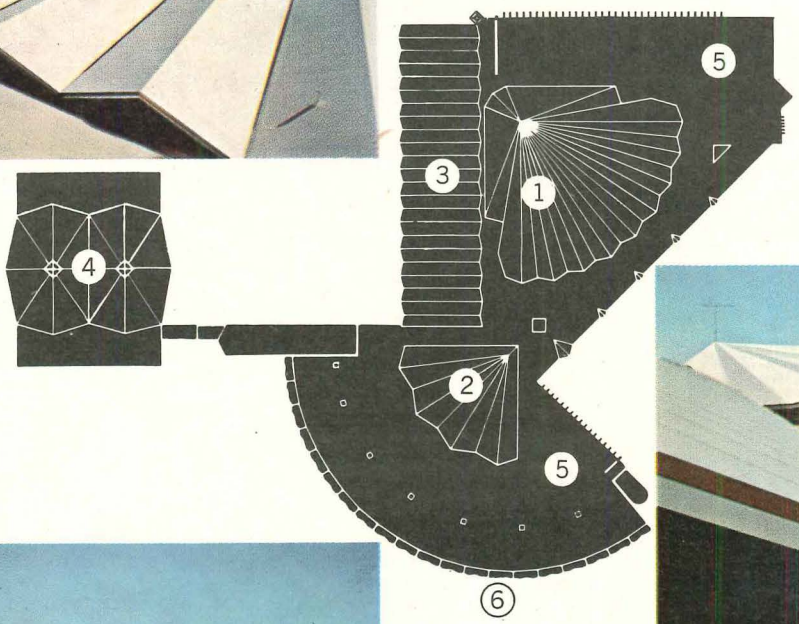

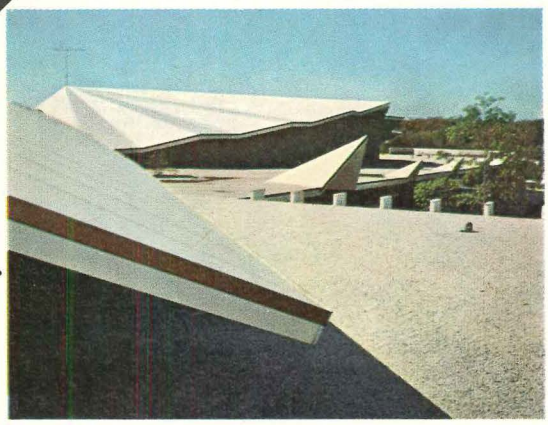

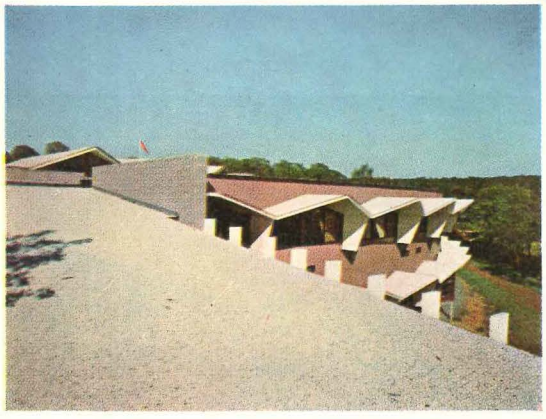

independence Connecticut

Johns-Manville roofing materials meet unique needs of Coleytown Junior High School–Joseph Salerno, Architect.

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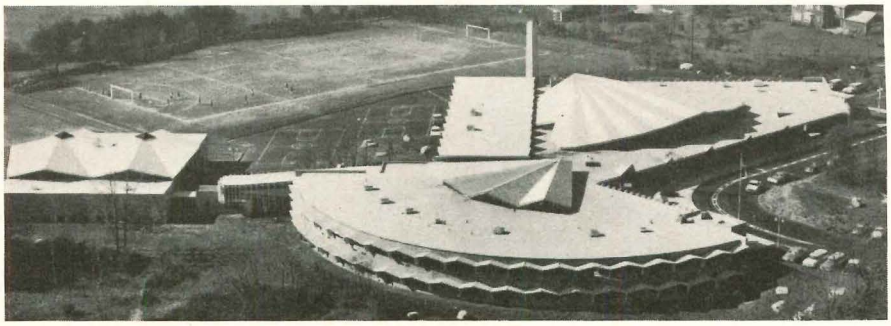

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Continued from page 24

Cleaning Foul Waters

Dear Editor: We have recently seen a copy of the JANUARY 1966 P/A, and we were particularly interested in the article on pp. 168–171 on water pollution. It occurred to us that you might be interested in having the latest information concerning the detergent industry's full-scale conversion from the "hard" ABS material to the new LAS ingredient, which has a high degree of biodegradability. I enclose for your information a kit of materials on this massive changeover program, which has cost the industry in excess of $150 million over the past 10 years.

The article referred to the ABS problem, and we would like to call your attention to the fact that the industry's action was completely voluntary in nature and did not result from legislative attempts "to ban hard 'foam' detergents from the market." May we also point out that, in most cases, the discharge of ABS-based detergents into ground waters resulted from the lack of adequate sewage treatment facilities.

We were also somewhat surprised to see the "lousy concrete" statement attributed to a builder, in view of the fact that ABS has often been used as an additive in making concrete.

The article, on balance, was an excellent contribution to the clean water effort in this country, and we compliment you for having run it. Our comments are merely to set the record straight regarding an often misunderstood situation.

ROBERT C. SINGER
Public Relations Director
The Soap and Detergent Association
New York, N. Y.

Point of Information

Dear Editor: Sometimes accurate reporting produces an inaccuracy, as when an incorrect statement is correctly quoted (p. 61, APRIL 1966 P/A). Although Mayor Tate's Stadium Advisory Commission report did indeed say so, the Philadelphia Chapter of the AIA did *not* participate in the selection of a consulting architect for the Federal Court Building, nor, to my knowledge, does such a consultant exist. You may wish to correct this impression.

T. NORMAN MANSELL
President, Philadelphia Chapter AIA
Philadelphia, Pa.

CORRECTION: Two articles in the MAY 1966 P/A failed to identify photographers: The "Cooperativa Tierra" photos were by Harksdaledejasu; "Barn on the Boulevard," by Julius Shulman.

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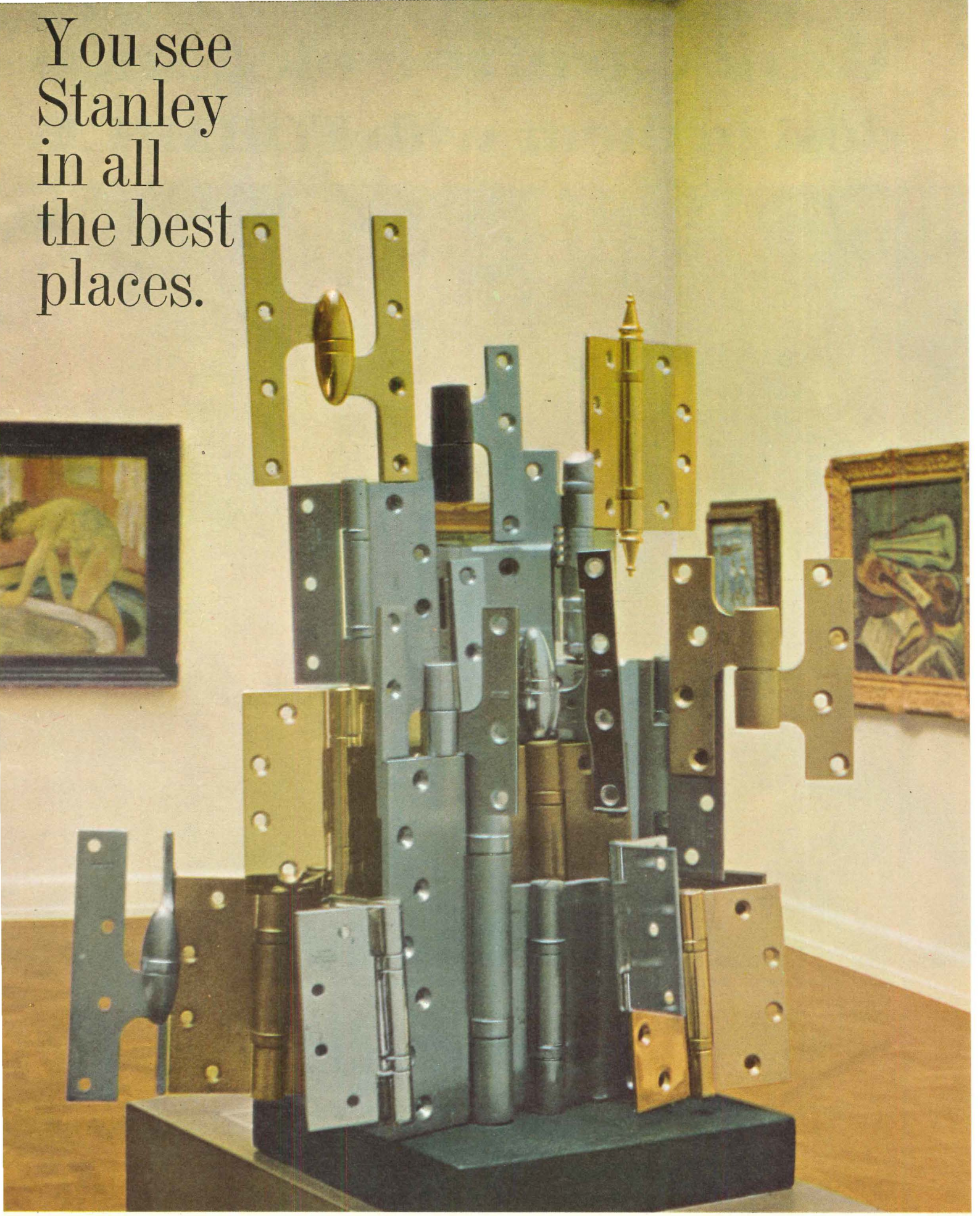

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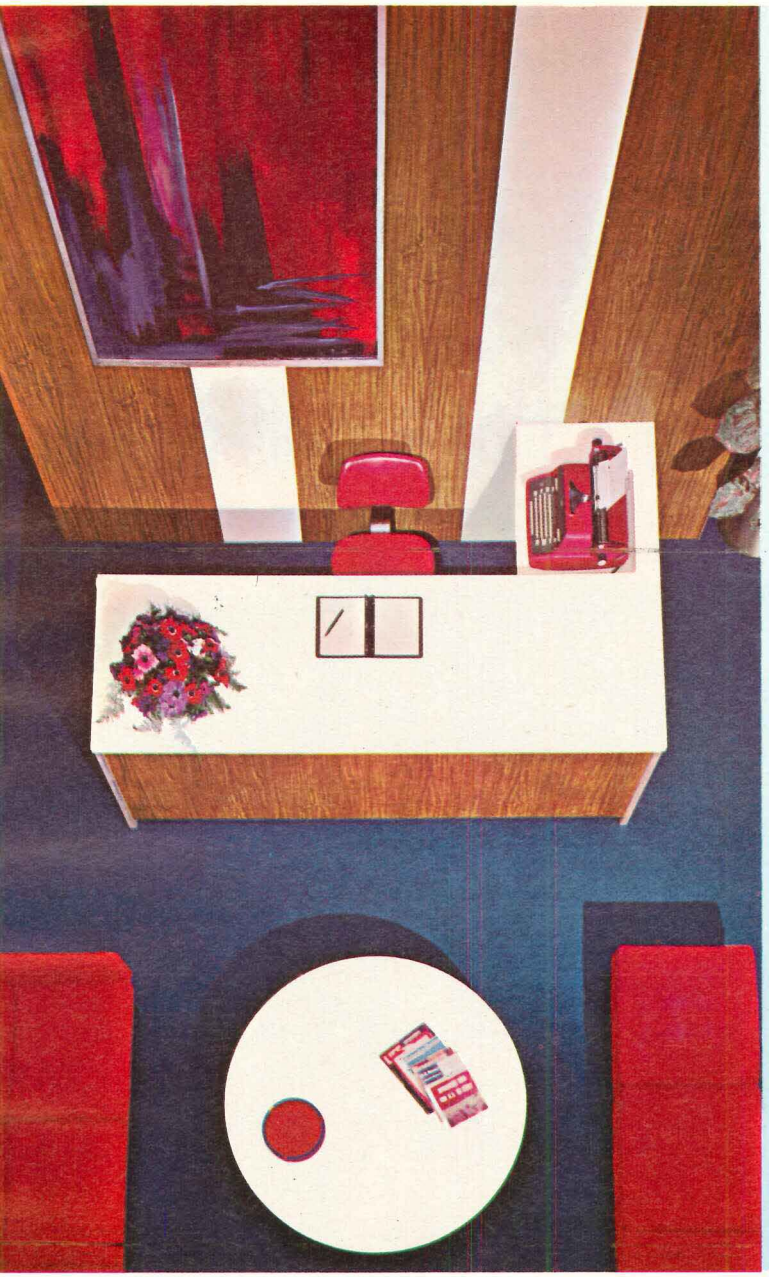

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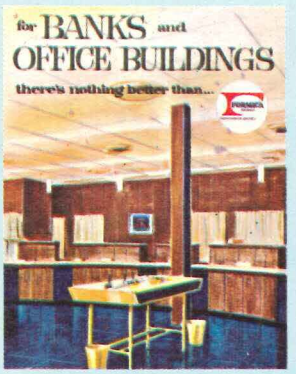

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FORMICA® is our brand name for laminated plastic, wall paneling, toilet compartments, industrial plastic, adhesives and flakeboard.

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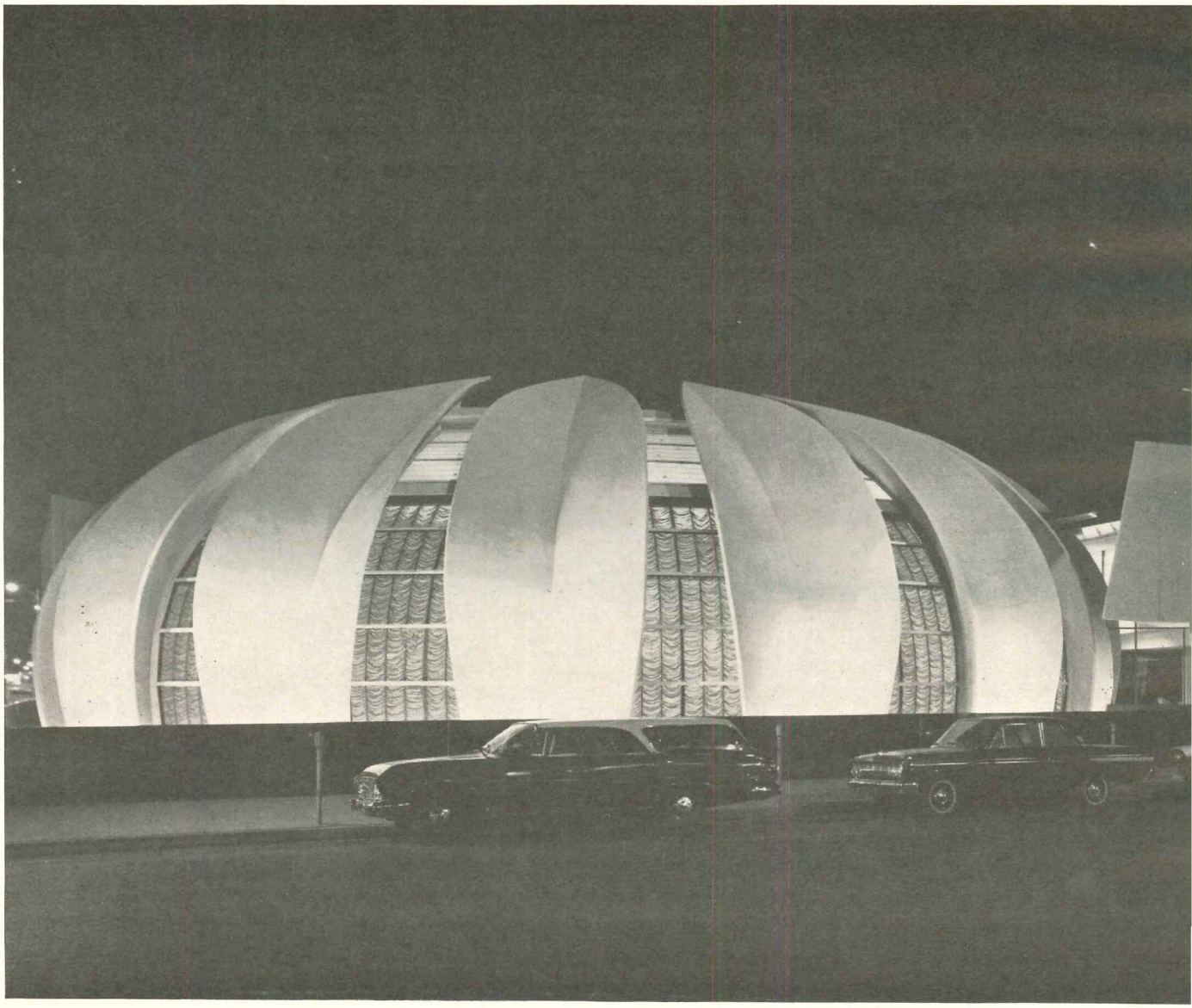
There's a new flair to finance . . . with a dividend from



Today's banks are warmer, friendlier, more people-oriented. This bright, new image is reflected in the fresh approach of architectural design.

New design concepts are being creatively expressed with concrete . . . the most versatile building material of all.

Key to the predictable performance of concrete is POZZOLITH — the most widely used concrete admixture. It makes concrete more workable, stronger and more durable. And it gives greater design freedom in the choice of form, texture and finish.

POZZOLITH may be the key to the physical expression of your design. For more information, call your Master Builders field man, or write Master Builders, Cleveland, Ohio 44118, and Toronto 15, Ontario.

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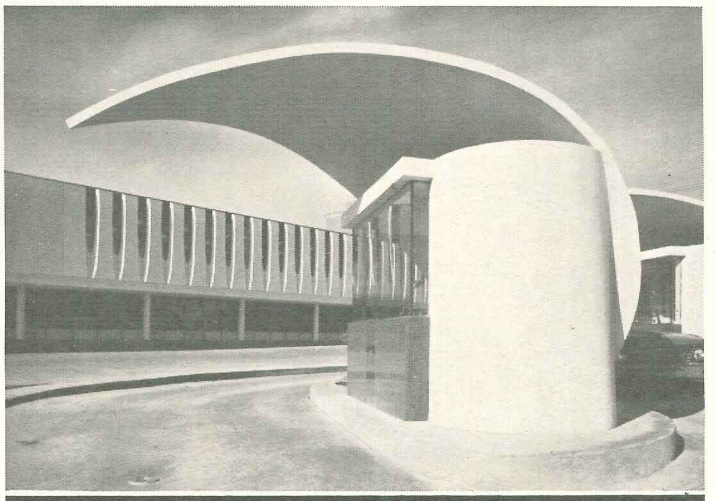
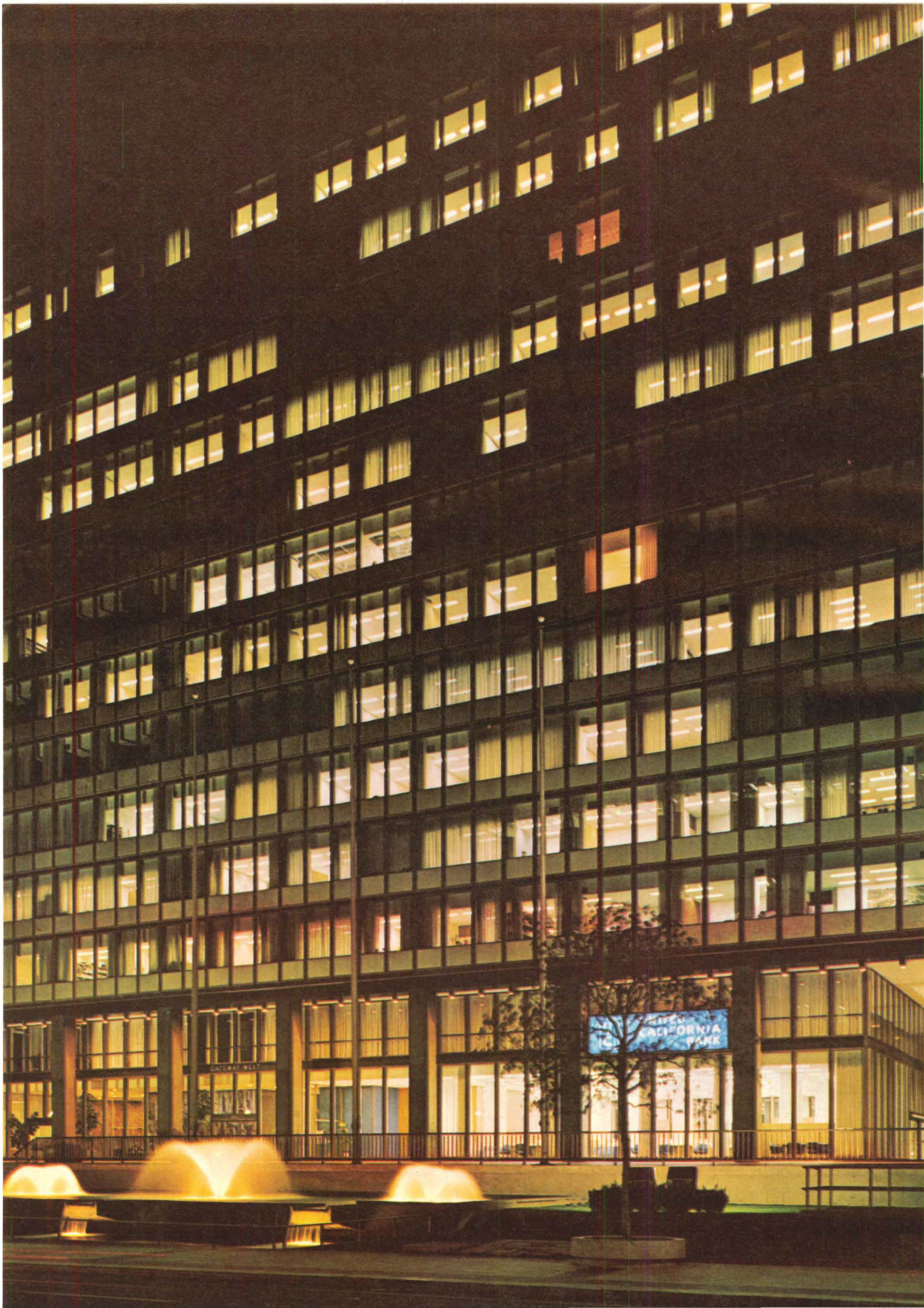
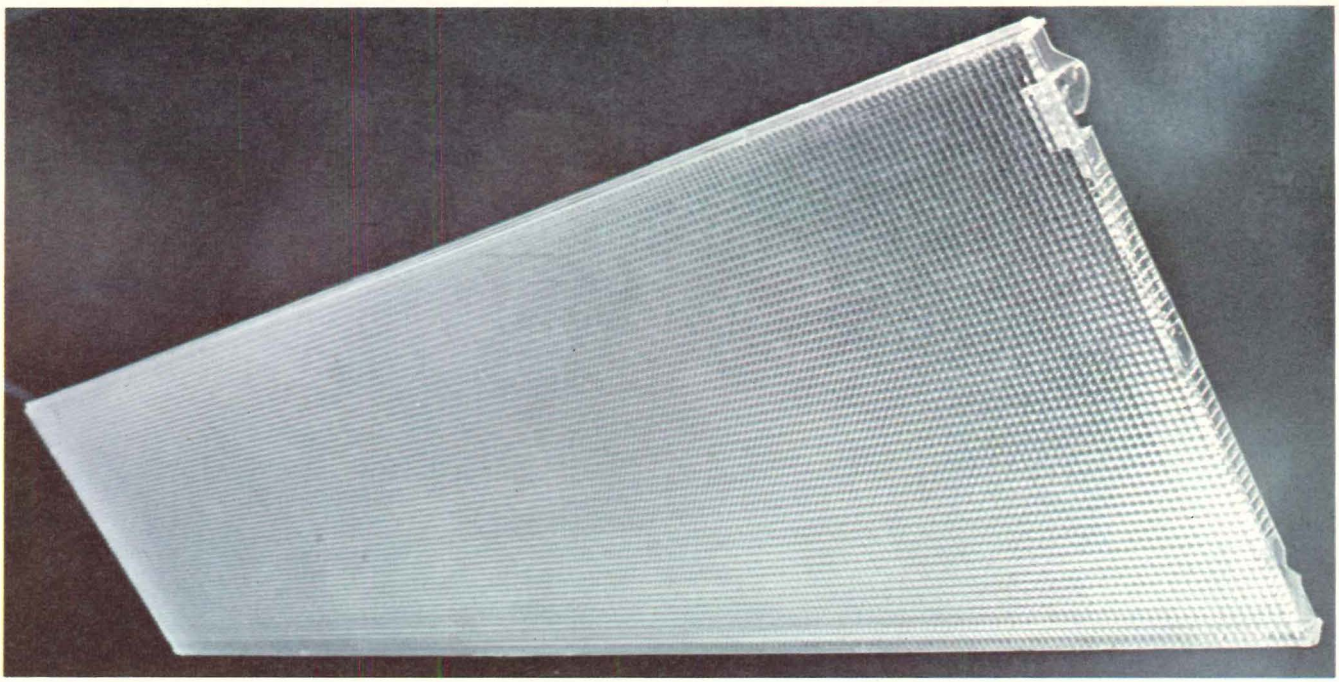


Sculptural techniques were used to form the chief features of the Wyoming National Bank of Casper — the soaring "petals" supporting the rotunda, the upper level's chiseled windows, and the unique, shell-like structures of the drive-in tellers' units.

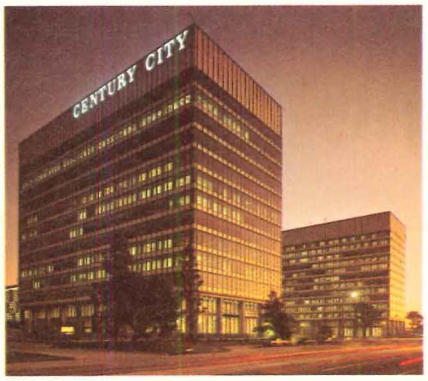
Architect: Charles Deaton. Structural Engineers: Ketchum, Konkel, Ryan & Fleming. Contractor: B. H. Baker, Incorporated. POZZOLITH Ready Mixed Concrete: Mobile Concrete Co.


CALIFORNIA
BANK



At bold new Century City

Holophane frameless lenses provide low brightness, high output illumination



More than ten thousand Holophane frameless lenses were specified to bring efficient, prismatically-controlled illumination to the new Gateway East and Gateway West buildings in Los Angeles. These 14-story twin office buildings mark the first stage of Century City, a monumental development which will eventually include more than six million square feet of office buildings and extensive apartment, shopping and recreation facilities.

At Century City, as in hundreds of new buildings throughout the country, Holophane frameless lenses provide lighting of optical excellence, low brightness and high output. The precision-engineered prismatic structure of the lens gathers and redirects light to provide comfortable, glare-free illumination. And there are no lamp streaks at usual angles of view. High pressure injection molding and rigid quality control guarantee the uniformity and accuracy of each Holophane lens. One-piece design is clean-lined and trim. There are no visible latches or hinges.

For complete information about Holophane's extensive line of frameless lenses, write: Dept. G-3, Holophane Company, Inc., 1120 Avenue of the Americas, New York, N.Y. 10036.

Architect: Welton Becket and Associates

Luminaires by Columbia Lighting

Owner: Aluminum Company of America

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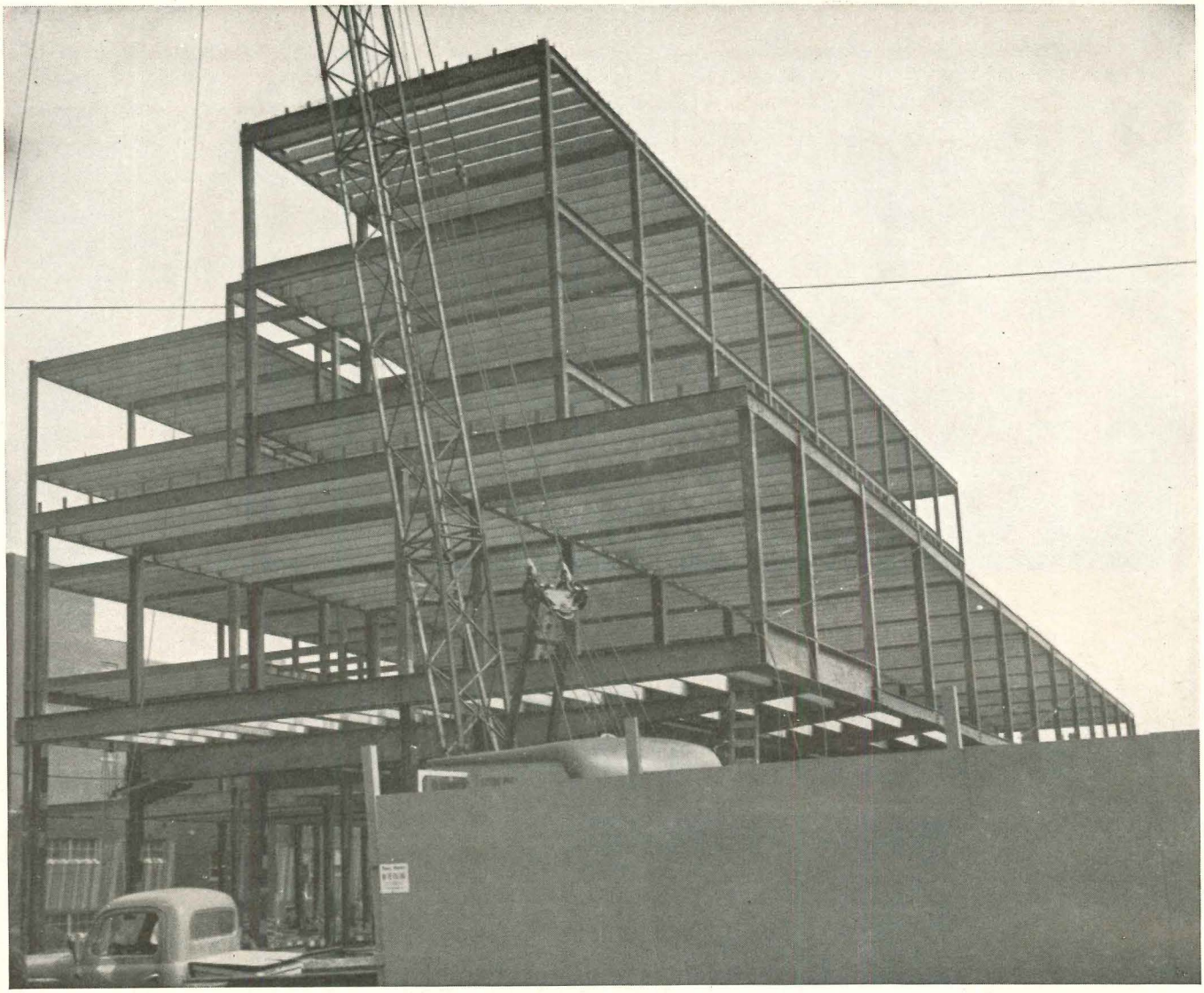

Vecellio and Kreps, Architects, Charleston, West Virginia
Baker & Combs, Inc., General Contractor, Morgantown, West Virginia
Prestressed Concrete Fabricator: Universal Cast Stone Company, Marmet, West Virginia

Prestressed Concrete Joists MEET SPECIAL NEEDS IN HOSPITAL ADDITION

Fire safety and economy were two important benefits provided by using prestressed concrete joist members throughout the new Marmet addition to the Charleston General Hospital, Charleston, West Virginia. Structural support for some 70,000 square feet of floor and roof is 12″ deep prestressed concrete joists, ranging in span from 26′-6″ to 4 feet. This repetitive use of a single section permits economy in fabrication and at the same time simplifies job-site handling and erection.

This project is another example of the use of prestressed concrete to meet special needs. And it is another project in which the prestressed concrete producer relied on proved-in-service TUFWIRE® Strand for prestressing.

A new booklet featuring interesting prestressed concrete projects is now available. Write for it on your business letterhead. TUFWIRE Strand and other Union Wire Rope products are made by Armco Steel Corporation, Dept. W-7436, 7000 Roberts St., Kansas City, Mo. 64125.

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MYRTLE DESK!

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Designer: Pietro Belluschi in collaboration with George M. Ewing Company, Architect
Construction Management: Turner Construction Company (Rohm and Haas served as its own general contractor)

You might have to play the waiting game for a taxi, your laundry, or a haircut.

But not for Haughton Computer-Controlled Elevators at the Rohm and Haas Building.

There's no "hurry up and wait" for elevator service at Philadelphia's magnificent new Rohm and Haas Building. The fully-automated Haughton elevators feature Haughton solid-state electronic computer control. It puts cars where the people are. On the double.

Precision electronic systems constantly monitor building traffic from top to bottom, and dispatch cars on a regulated basis to meet traffic needs at any moment of the day or night. Even during rush hours, when demand for service peaks, calls are answered with incredible speed.

The unique Haughton electronic control system is an advanced development of our continuing program in Elevonics.* Let us show you how it can improve service, save time for tenants and visitors, and cut elevator costs.

Your Haughton representative will gladly assist you with design counsel, technical advice or any information you might need in planning new buildings or modernizing existing ones. Call him soon, or write us for complete information.

**Haughton's advanced program in systems research and engineering, with specific emphasis on the creative application of electronic devices and instrumentation for betterment of systems design and performance. Reg. U. S. Patent Office.*

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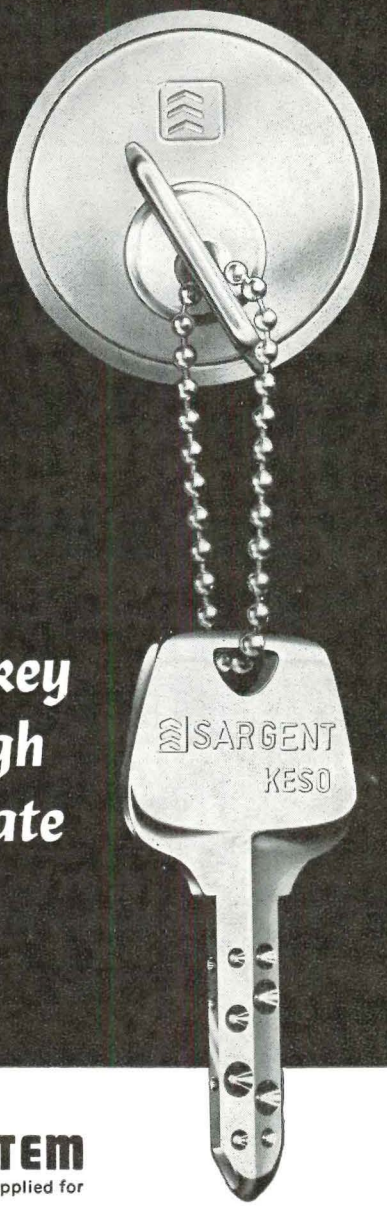
This is the lock cylinder that baffles picking...

with the key too tough to duplicate



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The new exclusive lock cylinder shown above baffles picking because multiple rows of interlocking pins bar the way to any picking tool. These new SARGENT MAXIMUM SECURITY SYSTEM lock cylinders can be opened only with unique special keys which cannot be duplicated on conventional key-cutting machines. Building owners, therefore, retain complete and proprietary control of all keys in their systems. And, since every installation is one-of-a-kind, there's never a chance of your keying system duplicating any other.

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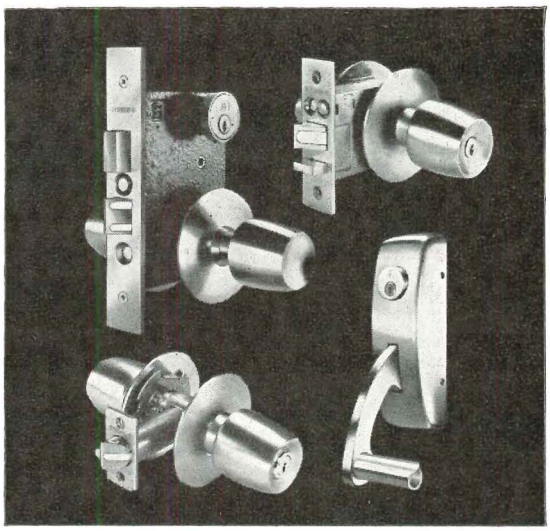

SARGENT MAXIMUM SECURITY SYSTEM cylinders are available in all Sargent architectural locks and exit devices . . . whether standard, removable core, or construction core cylinders.

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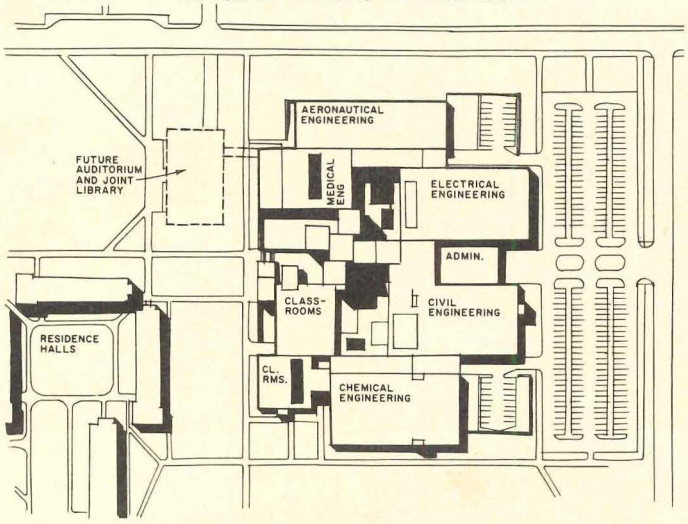
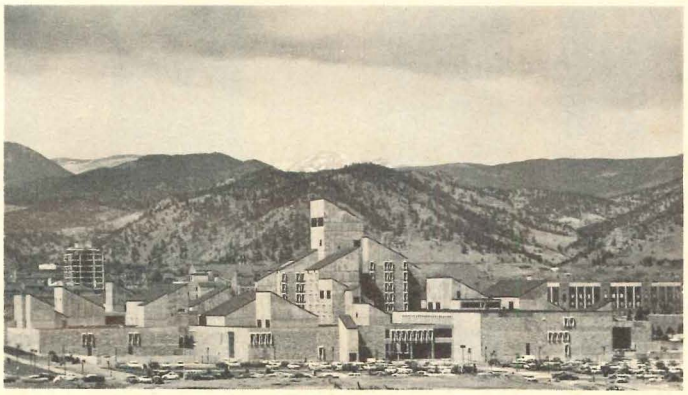
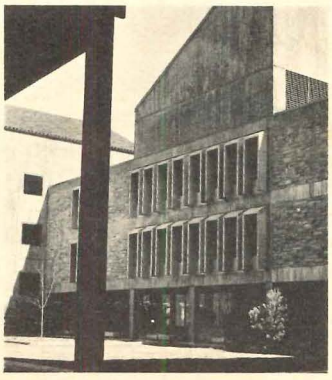
P/A NEWS REPORT

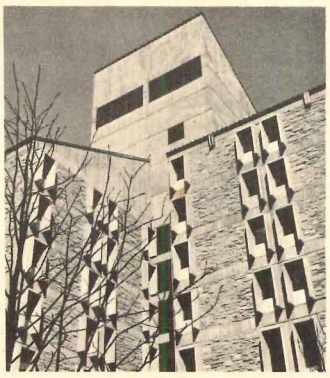
Progressive Architecture's Monthly Digest of Buildings, Projects, People and Products *July 1966*

ARCHITECTS DESIGN HANDSOME ENGINEERING CENTER









BOULDER, COLO. Three days of revelry, which included a ribbon cutting ceremony, marked the dedication of the University of Colorado's Engineering Center this spring. The $8,500,000 cluster of buildings covers 10 acres and is architecturally reminiscent of a mine head — dipped in concrete. Its bold, rugged forms are particularly well suited to its mountain-ringed setting.

Inside, in 279,000 sq ft of assignable space, are 31 classrooms, 250 laboratories, and 247 faculty and administrative offices.

Architects were the Architectural Associates of Colorado, a group of combined firms: William C. Muchow Associates, Denver; Hobard D. Wagner, Boulder; Fisher & Davis, Denver; Ketchum and Konkel, Structural Engineers, Denver.

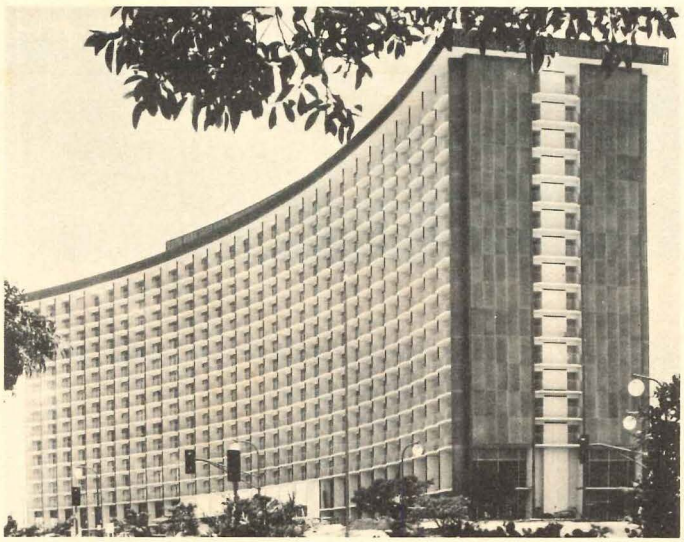
BREUER NEXT TO TRY ROOSEVELT MEMORIAL

WASHINGTON, D.C. The trouble with architectural competitions is preconceptions. Winning competition designs do not always agree with what the arbiters of taste had in mind. Last summer, objections of the Roosevelt family shelved the Pedersen, Tilney, Hoberman, Wasserman & Beer competition-winning design for a Franklin Delano Roosevelt Memorial.

Last month, Marcel Breuer of New York was named architect for the memorial by the Franklin Delano Roosevelt Memorial Commission. The commission, composed of 14 Senators, Representatives, and special Presidential appointees, chose a list of 55 architects. These were sounded out by letter and the list then narrowed to five. Each of the five (Breuer, Philip Johnson, Paul Rudolph, E. Lawrence Bellante, and Andrew Euston) were called before the commission to state what one source calls "their interest in the job." Breuer was selected. Breuer, who believes that his design will take from six months to a year to materialize, said he was sorry the original design was dropped, then flew off to the relative calm of Europe.

This may start another whole brouhaha. It is unlikely that the designer of UNESCO, the Bismarck priory, and the new Whitney Museum will come up with the sweet little Georgian temple the Roosevelt family evidently thinks an appropriate reminder of the vital man who was our World War II leader.

YAMASAKI'S ROOM WITH A VIEW



LOS ANGELES, CALIF. The heady smog of Los Angeles has been known to have peculiar effects on designers of buildings, all the way from restaurants in the forms of hats and flying pizzas to Edward D. Stone's evocation of the Mussolini era, the Perpetual Savings and Loan Headquarters in Los Angeles. But an architect who has brought

Structural windowalls of Mo-Sai

■ Why go to the expense of erecting a curtain wall, insulating, putting on interior finish, and planning around protruding structural beams when it can all be incorporated in one Mo-Sai windowall?

■ On the Dow Corning Trumbull Plant, steel I-beams were welded to clip angles along the top back side of the structural Mo-Sai walls. Steel roof joists were in turn welded to the I-beam. The inside surfaces of the insulated Mo-Sai units were given a light stippled finish during casting that required only painting to complete. Neoprene zipper gaskets were used to set windows directly into grooves cast in the Mo-Sai. Where windows were not desired, contrasting gray granite-faced Mo-Sai panels were cast integrally with the white quartz Mo-Sai frames.

■ Take advantage of the infinitely variable design possibilities of Mo-Sai for your next project . . . make certain you specify and get genuine Mo-Sai*.

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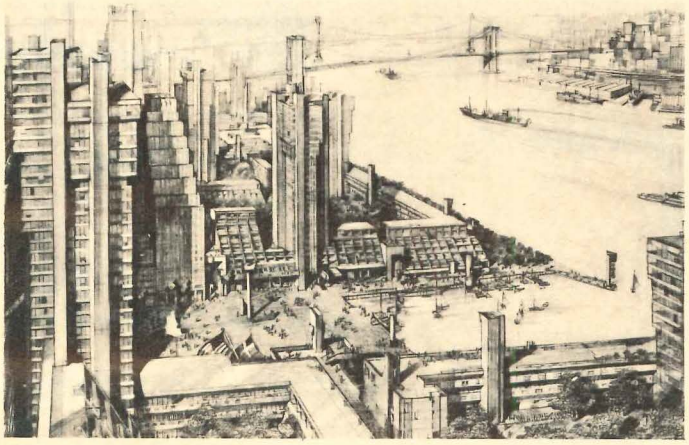
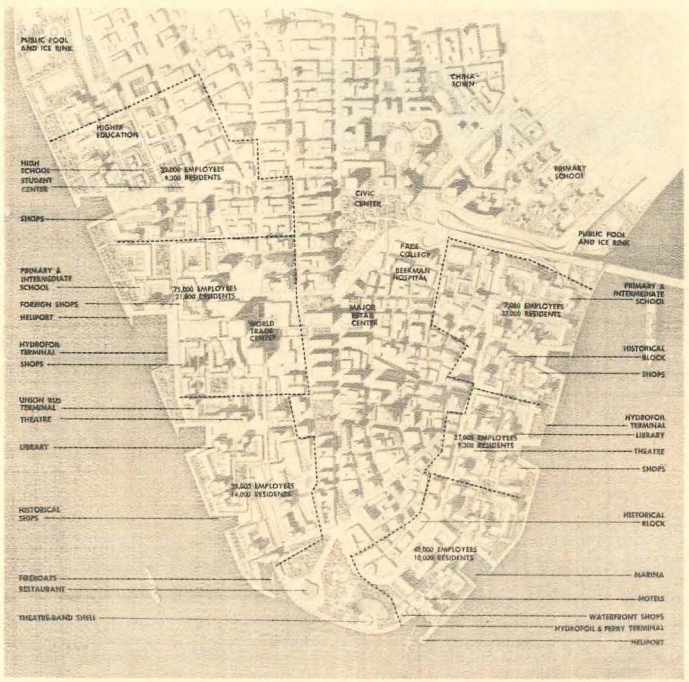
"delight" in the form of pavilion-like commercial buildings to Minneapolis and Seattle, and an extremely delicate façade to a gas building in Detroit, has resisted the siren songs of Lotus Land and designed a good, strong hotel — the Century Plaza — for L.A.'s Century City.

Yamaski's hotel has a lot of fun but no nonsense to it; its arc shape is designed to prevent long-distance corridorphobia, not just to look pretty. There are meeting rooms and ballrooms and that sort of thing, but they are out of sight, underground, leaving the site open to development for resort-like activities (p. 63, APRIL 1966 P/A). Not surprisingly — Aluminum Company of America owns Century City — aluminum plays a large role in the design: end walls are light-bronze panels, column covers are medium-bronze, and balcony railings (every guest room has a balcony) are regulation gray aluminum. Western International Hotels runs the place, which, now that it has opened, will be an amusing place for architects to visit — from here they can watch the activity of other architects (Pei, Obata, Becket, Luckman) in Century City. It is a splendid viewing stand.

THE FUTURE OF LOWER MANHATTAN





NEW YORK, N.Y. To many persons, Lower Manhattan, with its striking skyline, *is* New York City. It is the first glimpse of the city for tourists arriving by ship. And it is the favorite skyline view of advertising photographs, travelogues, and picture postcards.

Late last month, Mayor Lindsay and his City Planning Commissioner, William Ballard, announced a plan for the future development of Lower Manhattan Island.

Coming, as it did, only a few weeks after Governor Rockefeller had announced his abortive land-fill project with its domino-like buildings for north of Battery Park (see p. 54 JUNE 1966 P/A), the comprehensive Lindsay plan was particularly refreshing. It is not really a project, or even a series of projects, as planners Wallace-McHarg Associates and Whittlesey, Conklin & Rossant were quick to point out. Rather, it is "a guide for long-range decision-making . . . a system of development." Included are recommendations on how the land should be used, what sort of atmosphere or environment the area should have, and suggestions on how to move people into and around it.

One of the plan's most striking features is a waterfront residential community, which, in 20 years, would house some 80,000 to 100,000 persons on 500 acres of land stretching in a band around the tip of Manhattan Island. About 350 of these acres would be created by filling waterfront areas not occupied by unused or obsolete piers. The other 150 acres would be on island property now available for redevelopment. The community thus created would have six interconnected centers each clustered around waterfront plazas at the ends of major downtown pedestrian streets. The planners feel that 40,000 new apartments in the area would reduce the daily subway overloads, since most residents could walk to work.

Also proposed is a small, low, moderate-speed vehicle, called an Intra-Bus. It would have a low floor and relatively open sides, so that people who have to travel distances too far to walk but too short for a subway ride could step on and off easily.

For a detailed report on the Lower Manhattan Plan, see next month's P/A.

KETCHUM RESIGNS FROM HIGHWAY BEAUTIFICATION COMMITTEE

WASHINGTON, D.C. In early May, AIA President Morris Ketchum resigned from the Department of Commerce's National Advisory Committee on Highway Beautification. In a letter to Secretary of Commerce John T. Connor, Ketchum pointed out that his committee's advice had only been sought on theoretical projects, not actual ones, and that the latter, especially those concerned with highway design *within* cities, were in opposition to AIA policies and beliefs. "I believe the American Institute of Architects is being inadvertently placed in a position of tolerating, or even approving, policies of which it disapproves — policies which are also in direct opposition to those of President Johnson." The President has stated that ". . . roads themselves must reflect, in location and design, increased respect for the natural and social integrity and unity of the landscape and communities through which they pass." Despite this official statement, Ketchum pointed out, the Bureau of Public Roads has approved an expressway along the waterfront of New Orleans's French Quarter. "Apparently," Ketchum wrote, "his [the President's] message has not reached the minds or hearts of those responsible for the design of public highways."

THE DOUBLE DACTYL IS NOT A PREHISTORIC BIRD

In its June issue, *Esquire* magazine revealed examples of a new poetic form. Nurtured by a small group of innovators (Paul Pascal and Anthony Hecht invented it), the Double Dactyl, as it is called, had never before been seen in print. It resembles a limerick, and the way it works is as follows. There are two quatrains; the last line of the second stanza must rhyme with the last line of the first. The first line is a nonsense line, double dactyl, like Higgeldy Piggeldy or Pocketa Pocketa. The second line is a

double dactyl name, like Wallace K. Harrison. Somewhere in the second stanza must occur a single word that is a double dactyl. Once this word has been used, it may never be used again. All the other lines, except the last in each stanza, which are truncated, must be double dactyls.

P/A's editors, seeing promise in the form, tried it. Here are some of the results, none of which must be taken seriously. P/A will welcome any efforts made by readers to top these. Pass around the pads and pencils at your next AIA cocktail party and try dactyling.

Higgledy-piggledy
Ludwig Mies van der Rohe
Called Philip Johnson to
Design a high rise.

Doing it thataway,
Associatedly,
Wins lots of money
And the AIA prize.

— JTB

Higgledy-piggledy
Eliel Saarinen
Entered a contest and
Won second place.

Then, as a prominent
Paterfamilias,
Brought up a son who
Saved family face.

— JTB

"Louis I. Kahn and I,"
Wallace K. Harrison
Said, "Differ a bit in
Approach to design."

"On all my buildings I,
Ikahnoclastically,
Use lots of plastics and
Color and shine."

— JTB

Higgledy-piggledy
Oscar S. Niemeyer
Builded Brasilia
Next to a swamp.

All that he did was to
Ur-banal-istically
Create a mess where the
Weather is damp.

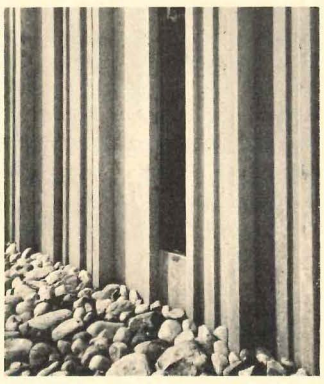
— EKC

TAKING A RIBBING

Photos: Marc Neuhof

WILTON, CONN. Hard by the buzz and blast of Route 7, like some ancient silent monolith, stands the Electric Indicator Company. Completed last May, the 28,000 sq ft, $378,000 building, designed by New York architects Fordyce & Hamby, is a pleasant change from the joints and junk usually found bordering highways. And the ribbed concrete bearing wall system can take the credit.

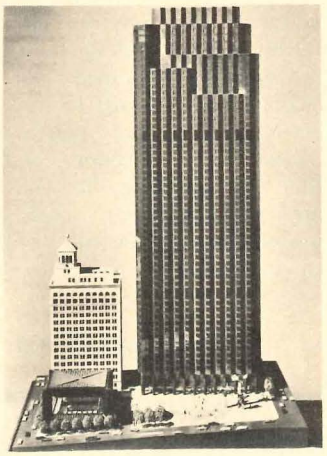
The 20′-high wall units (which, according to William Hamby, could be built to any height) are shop-made of precast, prestressed, post-tensioned units 3″ thick in corrugated patterns. The components, cast in 18 variations within a single wooden



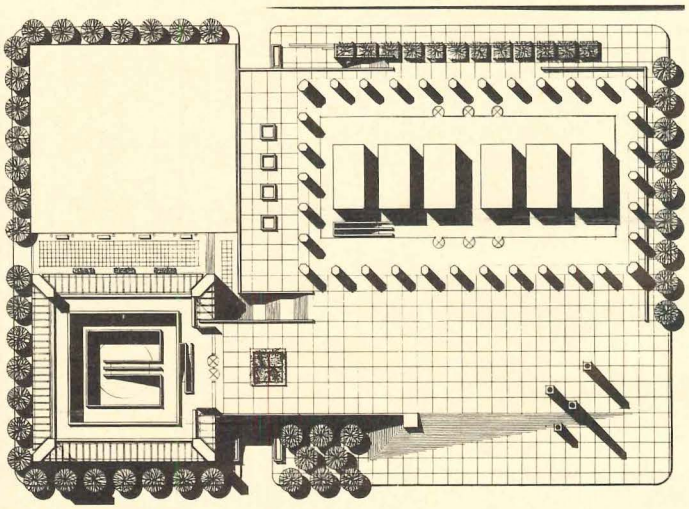
form, provide the facade's virtually random patterning. Precasting the wall units and use of a single type of mold, lopped one-third off conventional construction costs, bringing the building in at $13.50 per sq ft. Additional savings were made in the heating and cooling systems. Because of the narrow gun-slit windows, glare, heat, and cooling loss were minimized.

Equally striking is that this is a factory that provides aesthetic relief. The ribbed walls lend textural variety and interest. Moreover, they add to this small manufacturing space a certain modesty and serenity not often found in factory design.

BANK OF AMERICA HEADQUARTERS IS REFINED



SAN FRANCISCO, CALIF. Refinements to the Bank of America's world headquarters building (see p. 54, SEPTEMBER 1965 P/A), which should get under way here within six months, include about 10,000 sq ft more plaza area and an 8′ increase in the building's width. But perhaps the most striking, though least noticeable, refinement (except from passing helicopters) in the 52-story building's design is in the upper story setbacks.



These now step up gradually from San Francisco Bay toward Nob Hill, following the natural contours of the land.

Skidmore, Owings & Merrill now share equal design responsibility for the building with Wurster, Bernardi & Emmons. Pietro Belluschi continues as consulting architect. SOM's hand is most noticeable in the redesign of the small glass-enclosed main office branch bank (lower left in photo).

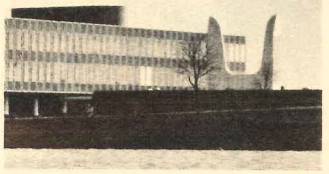
Most recent estimated cost is $92 million, including land and furnishings.

CALENDAR

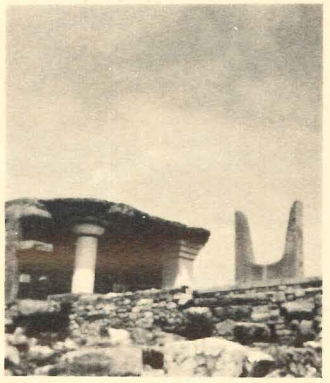
On September 21-23, the **International Conference on Space Structures** will be held at Battersea College of Technology, London, England . . . September 25-30, the **Prestressed Concrete Institute** will hold its annual meeting at the Rice Hotel in Houston, Tex. For further information, write PCI, 205 W. Wacker Dr., Chicago, Ill. 60606 . . . September 27-30, at the Waldorf Astoria in New York, the **Producers' Council** will hold its annual meeting . . . Leaving Los Angeles October 7 for 24 days of Japanese architecture and fun will be Kenneth M. Nishimoto's annual **Architects' Tour of Japan.** For information, write Mr. Nishimoto at 263 South Los Robles Ave., Pasadena, Calif. 91106 . . . The **Architectural Woodwork Institute**

will convene from October 19-21 in Williamsburg, Va. . . **Contract '67** will be the title for the contract furnishings industry show that will open next April at the New York Coliseum. Contract firms interested in learning about exhibition possibilities should contact: Jerome Brown, Exposition Manager, National Expositions Co., Inc., 14 West 40th St., New York, N. Y.

GOD IS IN THE UTILITIES



Norgas House, England
Photo: "The Architectural Review"



Palace of Minos, Knossos, Crete.
Photo: James Burns

The April 1966 issue of our esteemed English peer, *The Architectural Review,* devoted its lead article to Norgas House, the new office complex of the Northern Gas Board at New-Castle Upon Tyne, by Ryder & Yates. For the most part a straight forward performance, the project suddenly blossoms, on the roof of its cafeteria wing, into a set of huge fiber-glass and steel bull's horns straight from the Palace of Minos at Knossos.

We have all known for many years that utilities nurture a sense of divine right, but this is the first visible sign of it architecturally. The horns, together with the double axe, were the symbol of Minos's power and deity, and the symbol, of course, is repeated in many other instances: Osiris was reincarnated as a bull; Zeus possesed Europa in the form of a bull; Moses is endowed with horns in Deuteronomy; the list is considerable.

The *Review,* for some reason, saw fit to ignore this patent warning of overweening power, and dismissed the horns as a "folly" in the tradition of English eccentricity. We see in them a much more sinister announcement of authority, and dread the day when Consolidated Edison and its counterparts throughout the U.S. feel confident enough thus to proclaim their thrall.

PERSONALITIES

Gordon H. Smith, president of Albro Metal Products Corporation of the Bronx, New York, has become the president of the National Association of Architectural Metal Manufacturers . . . **Samuel Adams Bogan,** head of S. A. Bogan Engineers of New York City, has been designated president-elect of the Consulting Engineers Council . . . **Paul D. Speiregen,** director of Urban Design Programs for the AIA, has been appointed Program Director of Architecture and Design for the National Council on the Arts.

SCHOOLS

A Society for College and University Planning will be established at the University of Michigan in Ann Arbor. Executive director will be John D. Telfer, University of Michigan planner . . . Thomas L. Bosworth, New York architect, will head the department of architecture at Rhode Island School of Design . . . U. S. Government grants for study and professional training abroad in architecture and city planning during 1967-68 are now available under the Fulbright-Hays Act. Students enrolled in a college or university may obtain information and application forms from their campus Fulbright Program Advisor. Unattached candidates can find help at the Institute of International Education, 809 United Nations Plaza, New York 17, N. Y. . . . Chester Rapkin, staff director of the President's Task Force on Urban Problems, will join Columbia University's School of Architecture this month as a Professor of Urban Planning . . . Joseph M. Parriott has recently joined Pratt Institute Art School faculty as professor of design and chairman of the Department of Industrial Design. . . . The American Academy in Rome has announced a new fellowship in environmental design, which will begin in October. Applications and necessary information may be obtained from the Executive Secretary, American Academy in Rome, 101 Park Ave., N. Y., N. Y. . . . The first scholarship program for undergraduate students in urban planning has been established at the University of Illinois. The program, to run for at least four years, will provide six to eight students each year with full tuition and fees. Applications are now being accepted. . . . Columbia University's School of Architecture has announced a new graduate option—The Preservation and Restoration of Historic Architecture. The course will be under the general direction of James Marston Fitch, Professor of Architecture, and those interested should address inquiries to him. . . . Under a grant from Educational Facilities Laboratories, Inc., architect H. H. Waechter of Creswell, Ore., will direct a preschool facilities study at Colorado State College in Greeley, Colo. . . . James F. Stirling of London and Robert Venturi of Philadelphia have been named the first incumbents to the Charlotte Sheperd Davenport chair at the Yale School of Art and Architecture. Stirling will serve the spring term and Venturi the fall.

KALAMAZOO CATHEDRAL

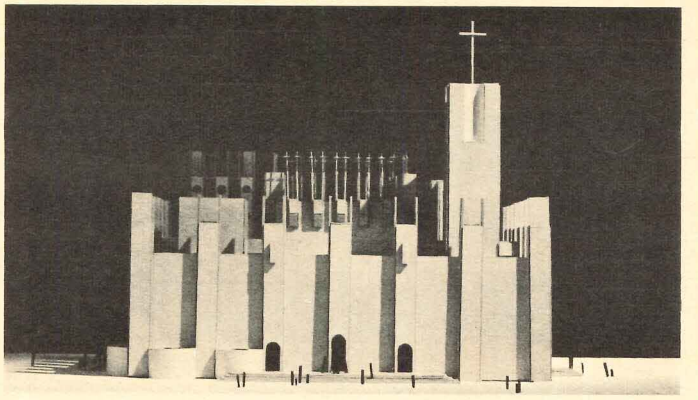


Photo: Orlando R. Cabanban

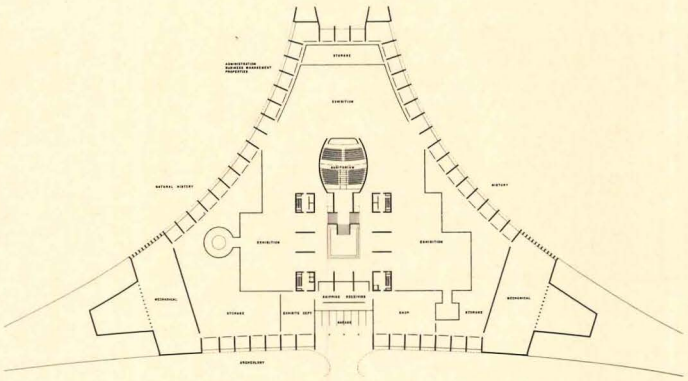
KALAMAZOO, MICH. Late this fall, work will start on the $2 million Cathedral of Christ the King, seat of the Episcopal Bishop of Western Michigan and a formally seated congregation of 1000. The cathedral, to be built of deep red brick and brownstone, will contain a bishop's office, social room, and two chapels in each of its four corners. These spaces, representing the arms of a Greek cross, will center on the altar. Future plans call for a surrounding covey of smaller buildings — a day school, convent, staff housing, seminary, and faculty housing.

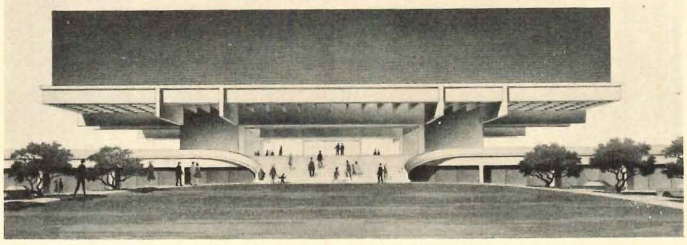
When P/A asked Chicago architect I. W. Colburn, whose firm is designing the prairie cathedral, why his church takes a medieval turn, he replied:

"When I was very young, the world of modern architecture was divided into two parts: one, the expression of steel; the other, the expression of nature. Hours were spent in discussing whether the steel was more significantly used as a horizontal or a vertical, or hours were spent trying to determine how you keep alive the tree that passed through the redwood roof while the house clung to the side of the hill like lichen to a rock. Although this was all very tidy, it seemed to me basically naive, for architecture, in becoming a fetish of materials, had lost its main purpose — shelter. But shelter is easily achieved and perhaps an architect should concern himself with the emotions of men. Modern architecture had always de-

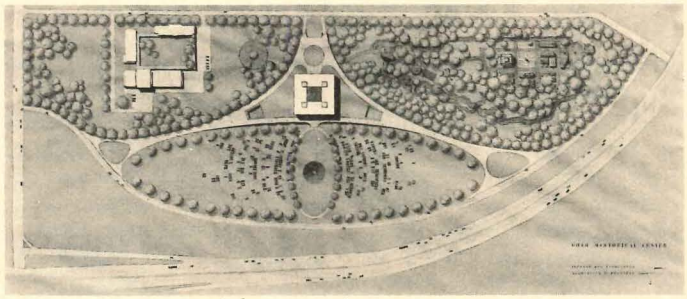
nied the emotional dimension of man and has appealed only to his intellect. Although this intellectual phase of architecture is important, it is only the basic step in a mature development. A mature architect should be concerned with man's grace, glory, and aspirations as achieved through the traditional manipulation of space, color, and light. The Cathedral of Christ the King is an exercise in this direction. If it looks somewhat medieval, it is because medieval buildings were interested in the emotions of man. Although materials come and go, man's ability to feel has remained constant."

GIVE ME AN O . . .



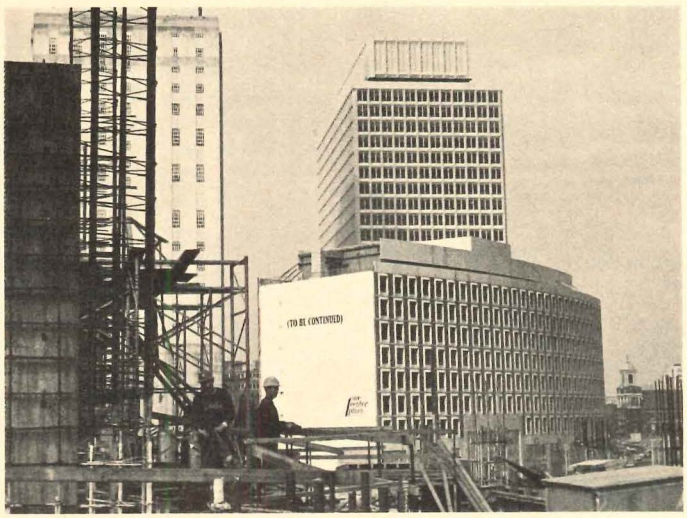


Photos: Moor & Wells Photography, Inc.



COLUMBUS, OHIO When Johnny Appleseed walked through the Ohio River Valley, he was making Ohio history; so was an Ohio boy, John Glenn, when he became the first American astronaut to orbit the earth. All this and more will be commemorated in the exhibit space of the Ohio Historical Center scheduled to rise from the ground near Interstate 71 in Columbus sometime this fall. Its design, by Ireland & Associates of Columbus, is strikingly similar to Charles Luckman's United States Pavilion at the New York World's Fair. But the raised square building (196 ft on a side) will be given a more pleasing site than the clutter of a fairgrounds. In front, an oval parking lot opens into a triangular earth-covered reception, display, auditorium level. The main building rises above this, and the geometric progression of oval, triangle, square makes the sum more than the parts. To the north of the main building will be a 17.5-acre landscaped area with winding trails, which will contain a re-creation of a pre-Civil War Ohio crossroads village. Included in the building will be library and archive space.

PERIPATETIC IN BOSTON



1 Photo: Forrest Wilson

BOSTON, MASS. Builders of the curved office building **(1)** near Boston's new Federal building have borrowed a couple of tricks from the comic books. Not only have they put a "to be continued" sign on one end, giving viewers a sense of wild suspense, but they have also given it a name only the comics could concoct: Its owners bill it as a "horizontal skyscraper."

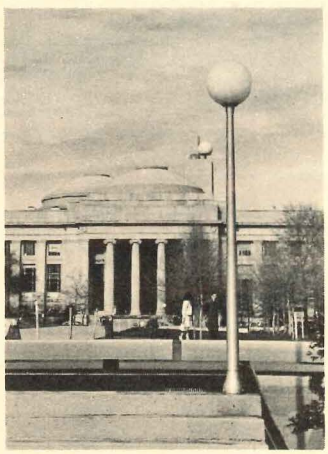
. . .

When archeologists in coming millenniums try to piece together the essence of our civilization, the workings of Calder's statue, "La Grande Voile" **(2)** (see p. 53, JUNE 1966 P/A), on the MIT campus will remain an enigma, How will they know that it had to be fed a skyscraper each spring? It is seen here swallowing the last of Boston's Prudential building.

. . .

Only when seen from a distance does the MIT School of Architecture building **(3)** reveal its entire architectural significance. Its roof domes are framed by two minor but supporting domes: the radar dome on top of I.M. Pei's Earth Science Building, and a street light dome on top of a long metal shaft.

2 Photo: Jan C. Rowan



3 Photo: Jan C. Rowan

EAVESDROPPINGS

"Here [the New York Trade Center] we have the world's daintiest architecture for the world's biggest buildings. . . . The tower's aluminum facing, on incredible 3′-4″ modules, will still shimmer at a distance like windowless metal grilles. The four low buildings, originally to be finished in the same aluminum, are now in a brownish concrete, tied to the

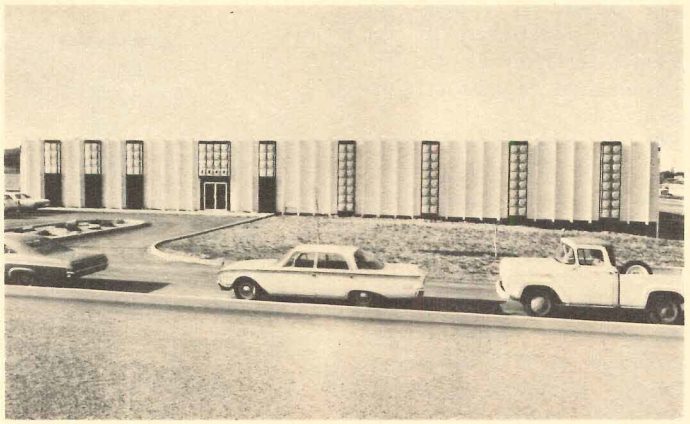
towers by the use of aluminum spandrels. At model scale, the relationship is undefined and disquieting. . . . The objective historian realizes that the 20th Century is in transition to a remarkable new technology and a formidable new environment, before we have learned how to handle the old one. Who's afraid of the big, bad buildings? Everyone, because there are so many things about giantism that we just don't know. The gamble of triumph or tragedy at this scale — and ultimately it is a gamble — demands an extraordinary payoff. The Trade Center towers could be the start of a new skyscraper age or the biggest tombstones in the world." *Ada Louise Huxtable, writing in* The New York Times.

"It is this vast growth of office space which is the genesis of London's (and New York's) worsening peak-hour's traffic congestion. While resident population in and around central London is being reduced, employment in the center has been increasing. The trends must be brought into harmony and out of conflict. Otherwise we shall have to pour vast funds of money into transport improvements which will quickly be used to capacity, making necessary yet further and more costly improvements. This process is endless and totally uneconomic. The improvements never pay for themselves and demand ever larger public subsidies. Make those who directly benefit pay the full economic cost and the pressures for transport, and traffic improvements would largely disappear." *Wyndham Thomas, "Planning the Growth of London, 1945 to 1985," the Peter B. Andrews Memorial Lecture at Syracuse University.*

"We must build new cities. This can't be done with pennies. I estimate that it would take a minimum of one billion dollars to build a city for 100,000 people — houses, streets, schools, sewer and water systems, plants, factories, office buildings, and shops, police and fire stations, parks, playgrounds, etc.

"To commit all that money is beyond the ability of private industry. Building new cities requires the help and participation of the Federal Government. Just as Congress years ago created a system to insure the financing of individual dwelling units, now it can create a similar system to insure the financing of new cities. It is the only way the job can be done, and planning for the job now is imperative." *William J. Levitt speaking before the Housing Subcommittee of the Senate Committee on Banking and Currency.*

TOYING WITH ARCHITECTURE



LOVELAND, COLO. Lawyer Perry Mason of T.V. fame always manages to get his client acquitted, despite impossible odds. Over steaks after the trial, Perry's secretary Della Street usually says, "Perry, there's one thing I don't understand: How did you know John was innocent?" To which Perry responds, "I had faith in my client."

Lego Building Toys, Inc., has shown proof of the same kind of faith in its product. Their plastic toy building bricks (see p. 195, APRIL 1966 P/A) have truncated knobs on one surface so that the hollow underside of one brick can be fastened to the knobbed surface of another. When Lego decided to build a new factory, it thought grandly of its toy bricks. Its recently opened plant, designed by architect Robert M. Morris, has, on the front façade, 120 white translucent plastic panels that are oversized replicas of its toy. Each panel is 2′ square by ⅛″ thick. According to one spokesman, "In addition to providing an attractive, eye-catching exterior for the building, the brick-shaped facing panels act as a light-transmitting wall during the day. Their use reduced the need for a large number of glass windows in the structure. At night, light from inside the building causes the panels to glow softly. Black letters spelling out the name LEGO are stamped onto the front surface of the facing panel installed above their main entrance."

ARCHOLOGY — ENVIROLOGY — PSYCHITECTURE*

SALT LAKE CITY, UTAH. The term "architectural psychology" may not mean much to the average practicing architect, but at the Second National Research Conference on Architectural Psychology, it meant many things to many people.

Like the first such conference, held in 1961, this one also was at Salt Lake City, and again under the sponsorship of the University of Utah. The three-day event was held May 26-28 in the resort area of Park City, one-time mining center; supporting the conference were the American Nurses Foundation, Educational Facilities Labs of the Ford Foundation, Easter Seal Research Foundation, Maurice Falk Medical Fund, and United Cerebral Palsy Research and Educational Foundation.

Participants numbered 43; observers (many of whom participated) numbered another 50. The total far exceeded the 28 participants who gathered in 1961. The range of subjects was also greater: (1) behavioral science research; (2) building research (hospital, education, etc.); (3) mental health and community planning; (4) design for the handicapped; (5) nursing problems in design; (6) behavioral science training programs for architecture; and (7) — last, and unfortunately least, because of the overcrowded schedule — computers.

The names of some of the participants will be familiar to P/A readers; some of the ideas circulating at the conference may be less familiar. A sampling follows:

☛ "The most sweeping conclusion that we came to is that what the architect *thought* would occur in the building, doesn't," said **William Ittelson,** of the Department of Psychology, Brooklyn College, describing his painstaking survey of the activities in two hospital wards in New York City. To some extent, the architect was playing a losing game from the start; single rooms were given double occupancy, and there were other forces beyond the architect's control, such as the disuse of hydrotherapy rooms. Ittelson suggests that the problem isn't lack of communication between architects and hospital staff, but that the staff doesn't know how to use a building. "We need a new person, a building manager."

☛ "We know more about the unusual than about the ordinary rooms," says **Robert Sommer,** Department of Psychology, University of California at Davis, "and more about the overcrowding of rats than about human overcrowding. We are in danger of developing a system of space that is based on mental hospital behavior." Sommer cautioned about some of the research now being done: Since the reaction to an unfavorable environment is avoidance, any exploration will exclude those who choose not to be there. Another note of caution: It is not enough to observe what people *seem* to be doing; of those patients who were recorded as "watching television," for example, very few could answer the simplest questions about what they had seen.

☛ "The behavioral sciences are one more input of information, to add to the

* Words coined by a fellow observer at the Second National Research Conference on Architectural Psychology.

architect's burden, but it becomes possible to design by intent and not by default," believes **Robert Wehrli,** one of the seven trainees in the University of Utah's program in architectural psychology. Trainees are under grants from the NIMH, and study under Calvin W. Taylor, psychologist, and Roger Bailey, architect, for an M.A. or Ph.D. (The master's degree is in either architecture or psychology, with a minor in the other; the doctorate is in psychology, with a minor in architecture.) Wehrli's project will attempt to measure whether architects utilize psychological data in design or whether they tend to "play with masses."

☛ "Architects are running around brilliantly solving the wrong problems," says **Ben H. Evans,** Director of Research Programs for the AIA, borrowing the remark from another architect, Herbert Swinburne. The AIA has discovered that about ½ of 1% of the nation's architects are involved in some systematic research, but by their own admission they are not engaged in the research they think *should* be done.

☛ "We don't need basic principles for building a mental hospital," says **Dr. Humphrey Osmond** of the New Jersey Neuropsychiatric Clinic, "we have them already. There's no excuse for not building a good mental hospital. Man's urban needs are far more serious. It should be the responsibility of the Federal Government and the building industry, who are about to make a great deal of money on this tremendous growth. Bob Sommer's study on rats indicates that the people who destroy their environment are the healthy ones, not the deeply psychotic. If we don't build the proper environment, I think people will destroy it." On another subject, Osmond commented that, "Architects don't know *how* people perceive space. My supposition is that most people find a large space awe-inspiring and frightening, not pleasant."

☛ "Perhaps we may look forward to the day when an architect can give a personality test and predict the kind of space that a person would want," said **Robert Bechtel,** psychologist at the Environmental Research Foundation of Topeka, Kansas. He reported on one of their experiments, which uses the electronic floor mats to record paths of museum visitors, and he suggests that tolerance of spatial ambiguity, for instance, might be one such personality variable.

☛ "The hospital-patient relationship is getting to be more important than the doctor-patient one," says **Hardin Branch** of the Department of Psychiatry at the University of Utah. "If the emergency room is taking the place of the family doctor, it will have to be redesigned." Dr. Branch also suggested that no architect should be permitted to design a hospital unless he has been a patient in one for a week.

☛ "Most hospitals are obsolete by the time they are built," commented **Hermann Field,** architect. One hospital that is being designed by an unusual planning team and with unusual results is the Tufts New England Medical Center, with Field as its Director of Planning. "We wanted the design component to be in from the beginning, but we tried to keep from stating the problem in spatial terms until very late." The techniques of his analysis, and the various unusual concepts, will be of considerable interest to architects and hospital planners. The hospital has 10-bed clusters, comprising five parent-child groups; it is a continual building — not a building any longer but a web that goes over the roadway, and becomes as much a problem of urban design as of hospital design.

☛ "The trouble is that architects have become separated from contact with the user of the building," remarked **Sim van der Ryn,** of the Department of Architecture at the University of California. "We've just done a dormitory study at Berkeley. One of the basic needs of college students is personalization; most dorms are somewhere between a hotel and a jail, and the student is not allowed to take possession of his environment." In the research, it was discovered that there are very few peaks of activity, contrary to what is supposed to occur at given hours. It was also discovered that girls are more oriented to surfaces, boys to objects. Another difference between boys and girls was their attitude toward public vs. private space. Girls consider the corridor semi-public, getting dressed to go into it, and the rooms private, expecting visitors to knock. Boys regard the whole floor as their world.

☛ "We found marked differences in interaction of children with the manipulation of space," reported **Bertram Berenson,** chairman of the Department of Architecture at Hampton Institute. With an experimental building that can be rearranged into many shapes and sizes, his multidisciplinary team discovered that a truncated triangle classroom can induce a longer attention span among retarded children.

☛ "Our problem is in deciding *what* to build; we *can* build anything," says **Theodore Larson,** Professor of Architecture at the University of Michigan. The Architectural Research Laboratory at Michigan has been investigating the effects of environment upon the learning process; their most recent document is a case-study on the effects of windowless classrooms on children.

☛ "The major problems in the bathroom are not technical, they are psychological," said **Alexander Kira,** author of the recently released study, *The Bathroom: Criteria for Design,* undertaken at the Center for Housing and Environmental Studies at Cornell.

☛ "I am turning out people for a job that will exist in 5 to 10 years," pointed out **David Stea,** talking about the course he has been giving for liberal arts undergraduates at Brown: Problems in Behavior and Design. "The emphasis is on what is not taught elsewhere and on questions rather than solutions." The course has dealt with such subjects as ownership of space, in conceptual rather than legal terms (territoriality in animal studies); violations of personal space in architecture (overcrowding and stress); the classic studies on effects of enviroment on behavior (*The Organization Man,* etc.); architectural programming as a problem and a process.

The conference was thus a mélange of ideas, coming hard and fast for three days. As with most conferences, there was too little time for meaningful discussion. One typical comment, heard outside the conference room: "Just because a situation is measurable doesn't mean that it *must* be measured. It may be an achievement to record certain quantitative effects on behavior, but it avoids dealing with the likelihood that by the year 2065 there may be 50 billion people on earth. How are we preparing to understand and build for this situation?" Then, too, some experiments have extremely limited use. The behavior they are recording may be highly adaptive, taking its form *because* of the architecture, and likely to take a different form if not restricted.

The conference ended where it began. We know too little about the effects of environment on man, and the needs of man regarding his environment. "The human being is so adaptable, we don't know what it costs him to adapt," said Dr. M. L. Jane Abercrombie, a biologist who is teaching at the Bartlett School of Architecture in London. — EP

HELLO, DALI?

LOCAL ARTIST GIVES INTERPRETATION OF PROPOSED DALI STATUE

Reproduced from *The Richmond News Leader*

RICHMOND, VA. It all started last year with a quiet, matter-of-fact proposal by the City Planning Commission. The Commission wanted to move some of the statues on

Main chapel entrance with stained art glass doors controlled by Norton Series 1940 overhead concealed double acting closers. These doors are very heavy and place an extremely high inertial load on the closers. In addition, a natural draft, due to the construction of the building, is always present. The doors are under control at all times.

Again, at the Dominican Education Center
NORTON CLOSERS CONTROL DOORS—NOT DESIGN

The quiet beauty of this Dominican Convent and Mother House is unobtrusively preserved with Norton® door closers.

DOMINICAN EDUCATION CENTER
DOMINICAN SISTERS OF SINSINAWA
SINSINAWA, WISCONSIN

Architect: Siberz-Purcell-Cuthbert, Architects
Madison, Wisconsin

Hardware Distributor: Wolff, Kubly, Hirsig Co.
Madison, Wisconsin

This beautiful convent was set into the hillside and blends naturally with its surroundings. Much of the stone used in the construction of the chapel was moved from the hillside to make room for this lovely building.

Construction of a new education center was to be complete with dining areas, living quarters, schoolrooms and a new chapel. The architecture had to tie in with existing buildings and blend into the hillside. The new Dominican Education Center at Sinsinawa, Wisconsin, meets all these requirements in a quiet, beautiful setting unique only to a religious community.

To follow through with this quiet beauty, Norton Door Closers were used throughout. There was no problem in providing adequate door control and in complementing the architectural decor. Norton closers are designed and built to give the very best in positive door control. In addition, they have been styled to give the architect complete freedom in realizing the decor and interior decorating feel he desires. Norton closers truly control doors, not design.

To meet the control need of this custom built door, Norton Series 1940 overhead concealed closers were used. These closers mount in only 1¾" x 4" of the head jamb. They are non-handed and double acting with adjustable back check.

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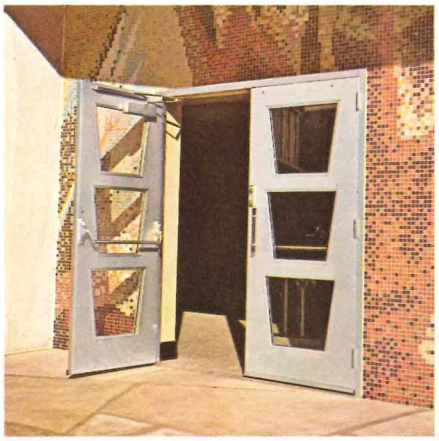
MAIN DINING ROOM DOORS



ENTRANCE DOORS

LIBRARY DOORS

Exit doors *to the courtyard from the enclosed corridors are controlled by Norton Series 7000 narrow projection closers with covers of anodized aluminum. The closers have been selected to match the aluminum door and triangular window frames.*

Main dining room doors *also feature Norton Series 7000 narrow projection closers. Here the aluminum cover matches perfectly with other hardware to give a striking contrast with the dark finish of the door.*

Entrance doors *to the chapel area are controlled by Series 7000 closers with covers. Again, these closers blend in naturally with the modern design of the doors.*

Library doors *immediately under the chapel have Norton Series 7000 closers with aluminum covers to match door hardware.*

1120

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Monument Avenue and add seven new ones. Nameless until the 1890's, Monument Avenue received its designation after the 1887 dedication of the Robert E. Lee monument. The Lee monument took a natural hold in the capital of the Confederacy and was followed in 1907 and 1915 by monuments to Jefferson Davis, Jeb Stuart, and Stonewall Jackson. Matthew Fontaine Maury, though better known for his work in oceanography, was, after all, a commander in the Confederate navy and a statue to him was raised in 1922. These five monuments make up "our lovely avenue," as Richmonders are prone to put it. Any visitor to the fair city is taken on the tour that inevitably includes a look at the pointing fingers of those heavy heroes.

The Planning Commission saw through all the umbrage of age and history and made its recommendation to change the staid old statuary for a better avenue. As the statues stand now in the middle of buzzing traffic lanes, they serve little more than the city's pigeons. The five existing monuments are concentrated in the easternmost blocks on Monument. The planners would have the monuments stretch more aptly an extra 23 blocks to the west, where the city's growth has taken the tree-lined, ambling, cobble-stoned drive into a quickening pace of more people and stoplights and fewer trees and sidewalks.

No sooner was the word out than the battle began, not over the proposed change so much as over who would be next cast in stone. Patrick Henry, Admiral Byrd, James Branch Cabell, Ellen Glasgow, Douglas Southall Freeman — all vied for position. Then, last January, the Reynolds Metals Company announced it would donate 1000 lbs of aluminum castings to commemorate Captain Sallie Tompkins. Who was Sallie Tompkins? Answer: The only woman to receive a commission in the Army of the Confederacy; in charge of a hospital, she was responsible for returning a reported 1300 men to the battlefields and The Cause.

Never one to let a sleeping cause lie, a committee to put Sallie on Monument Avenue was formed. And Salvador Dali was suggested as the artist to put Sallie up there. Dali's assistant, Peter Moore, came to town last April and let it be known that any statue Dali would design would most likely have the little lady in the garb of St. George (with a Confederate flag as a shield) fighting a giant germ. The pedestal would be a tasteful 20′-high enlargement of Dali's little finger. Moore was quoted as saying, "He [Dali] wants to pay tribute to America this way — a kind of Statue of Liberty, you know."

They are working on it now. There are committees trying to raise the necessary $50,000 to put Sallie by Dali up there and it's all in the name of Beautification.

PACING THE TRIBUNE

Photo: Bettman Archives

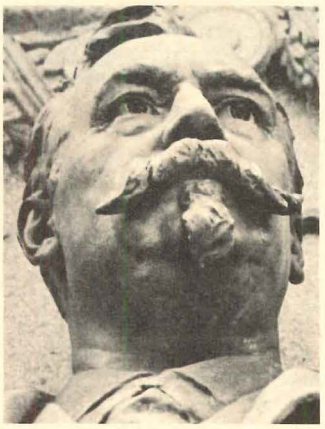


Photo: Maude Dorr

Bust of R. M. Hunt in New York's Central Park, former site of his Lenox Library.

NEW YORK, N. Y. The years of *The New York Herald Tribune* (1841-1966) have been long and glorious ones. Founded and edited for 30 years by Horace Greeley, the paper had a staff of such notables as Charles A. Dana (15 years as the chief editorial assistant), George Ripley (30 years writing the country's first regular literary and book review section), and Karl Marx (occasional London economic and labor correspondent). Such was the influence of the *Trib* that, with an 1860 circulation of 200,000, it was said to come "next to the Bible." During the Civil War years, the paper experienced a number of peaks and valleys, largely because of Greeley's political standing. His signing of Jefferson Davis' bail bond cut the *Weekly Tribune's* subscription in half. In 1872, after losing the Presidential election to U. S. Grant, Greeley went insane and died. Two years later, in 1874, the newspaper he had devoted so much of his time and talent to moved into a new Richard Morris Hunt designed building. And now that building will be torn down to make way for a $12-million college campus.

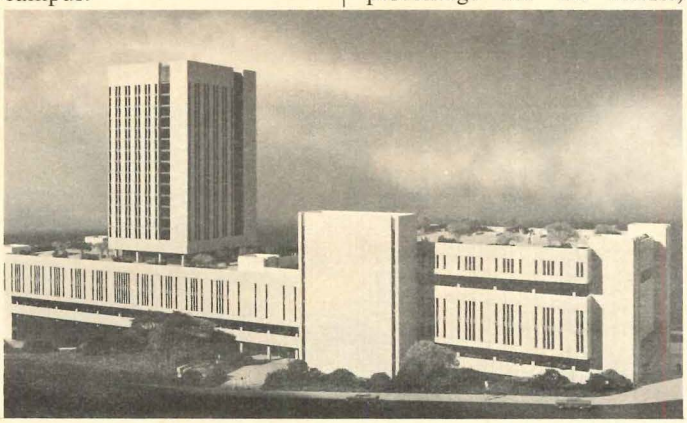


Photo: Louis Checkman

Hunt's Tribune Building will not be the first of his well-worked designs to be felled by the wreckers. His Guernsey Building, Iron Exchange, Elbridge Gerry House, Astor House, W. H. Vanderbilt House, and Lenox Library have all disappeared. New Yorkers may be the poorer for wrecking Hunt's Trib Building, but others will still remember him as the rich man's architect — as architect of the Breakers in Newport, R.I., and of the Biltmore House in Asheville, N.C. Few remember Hunt's university work (still extant are Yale's Scroll & Key Club, Harvard's Fogg Museum, Princeton's Chapel, and West Point's Academic Building and Gym). And even fewer know of Hunt's real influence on architecture today.

On the whole, Hunt's work was not revolutionary; it bespoke an honest elegrance. His quasipalatial hulks rising off Newport Beach and Fifth Avenue have more historical than architectural significance. They speak of The Gilded Age of big money in the U.S., not of the golden age of design. But there was more to Hunt than money.

To begin, Hunt was the first "finished" architect in this country. The first American student at the Ecole des Beaux Arts, he gave the architectural profession respectability and esteem in a nation where architects were little more than carpenters. Hunt's first work in New York was not of his own doing. Hoping to take up the more respectable profession of law, Hunt was persuaded by his dentist, Dr. Parmly, to design twin townhouses for the good doctor and his daughter. This Hunt did, but when the doctor refused to hand Hunt a percentage for his efforts, Hunt sued — the first legal test between architect and client. The *Hunt v. Parmly* suit in the mid-19th Century established forever that an architect is due his fee. And Hunt was well on his way.

Hunt's contributions from that time on were many. In 1857, he and Richard Upjohn and 11 other architects founded the AIA. Upjohn became the first president and Hunt the secretary. Hunt, who went on to become the third AIA president and one of the founders of the Metropolitan Museum of Art, was generally regarded as the dean of American architects. Sixteen-year-old Louis Sullivan went to the great man for advice. McKim called him "pioneer, missionary, and general slugger."

His 260′, nine-story Tribune Building on Nassau Street

(the tower and additional floors came later) was one of New York's first skyscrapers and the first elevator office building. (The old steam hydraulic elevators are still working.) It was located in an area near City Hall, which, at the turn of the century, held virtually all the press — and power — of New York (see photo: l. to r., The Sun Building, The Tribune Building with Horace Greeley statue in front, the Times Building with in-construction Brooklyn Bridge behind it). "Newspaper Row," where the *Times,* the *World,* the *Sun,* and the *Tribune* all published, is now all but extinct. There are still a few newspapers, but television, radio, and the unions have slowly eliminated them, and urban renewal projects have eliminated the original buildings. The Tribune Building now wears the scaffold skirt of the wrecker. Together with the former home of the *Times,* the Tribune Building will bow to Pace College's expansion program. The Times Building, presently serving as the main college building, will become Pace's Graduate School of Business Administration. And this fall, construction will begin on a $12 million, 430,000 sq ft complex of residential halls, offices, and classrooms. The two-block complex, which will stand between City Hall and the Brooklyn Bridge, has been designed by the New York firm of Eggers & Higgins. The center will include a 15-story dormitory tower and a five-level phalanx of classrooms, lecture halls, library, science and mathematics center, computer center, offices, gymnasium, student center, cafeteria, and 755-seat auditorium-theater. With completion due in early 1969, Pace will use this campus for an expected 10,000 more students by 1970.

Education will be improved, but will the area?

READABILITY

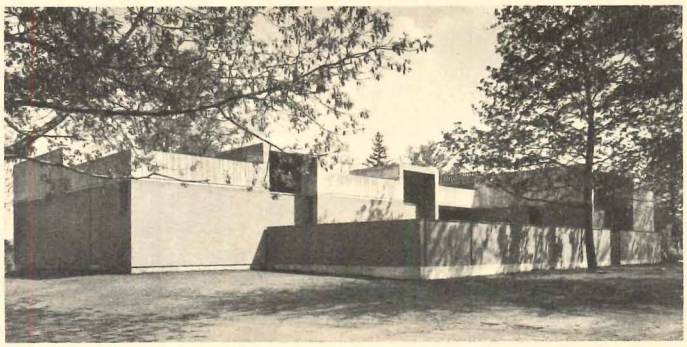


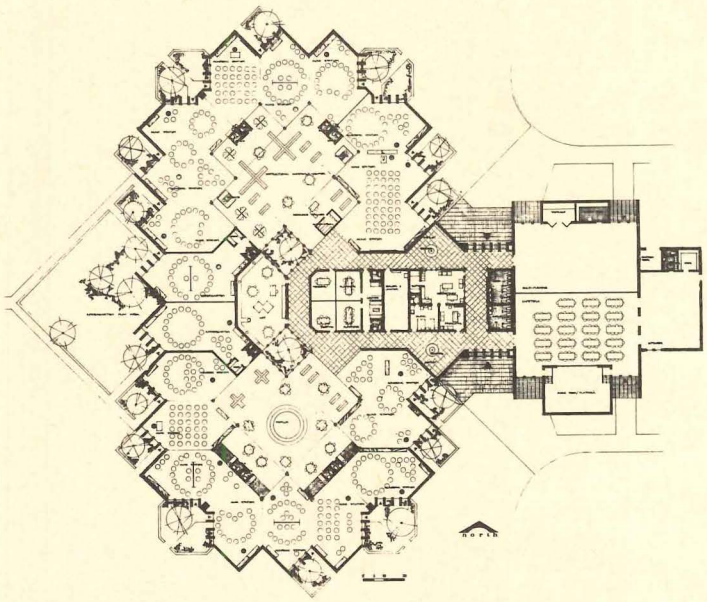
Photo: Thomas Brown

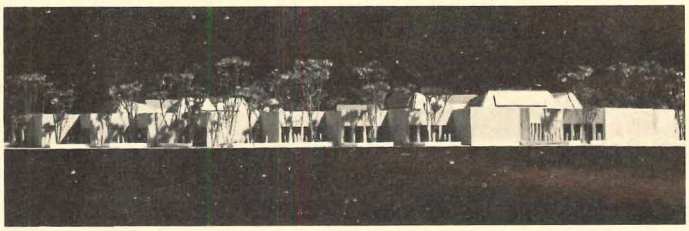
NEW HAVEN, CONN. Mr. Dooley once pointed out that "Libries niver encouraged lithrachoor anny more thin tombstones encourage livin'." But perhaps this library, New Haven's first in 40 years, will prove the exception. The Donald G. Mitchell Branch Library has, since its founding in 1910, been located in the Ebenezer B. Beecher (inventor of the first matchmaking machine) mansion. This past April, the Mitchell Branch moved its cards, catalogs, and 35,000 books out of the soon-to-be-demolished mansion into a quiet contemporary facility next door.

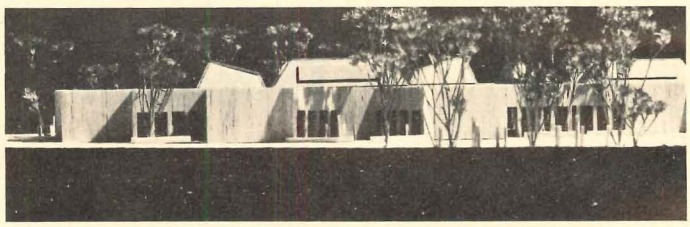
The new library, designed by New Haven architect Gilbert Switzer, with Sasaki, Dawson, DeMay Associates as landscape architects, reverses the old truth about "age before beauty." The new facilities (shown above) have retained the parklike setting of the old mansion and have been integrated into this setting by planting and natural materials. Brick, rough concrete still bearing the form marks, natural undyed wool carpeting, oak millwork and furniture — all work to keep the design on a low key. The plastic form that the Mitchell Branch took is largely a result of the extensive use of light wells. Instead of conventional windows or glass walls, large wells or light monitors above the general ceiling level were used at each group of reader tables to create soft, diffused, glare-free light. This lighting system also serves to cut down on outside distractions while permitting an uninterrupted use of the exterior walls for stacks.

At a construction cost of $250,000 (including landscaping) New Haven has gotten a bargain — 10,000 sq ft of no-nonsense library design.

THE MANY SIDES OF EDUCATION



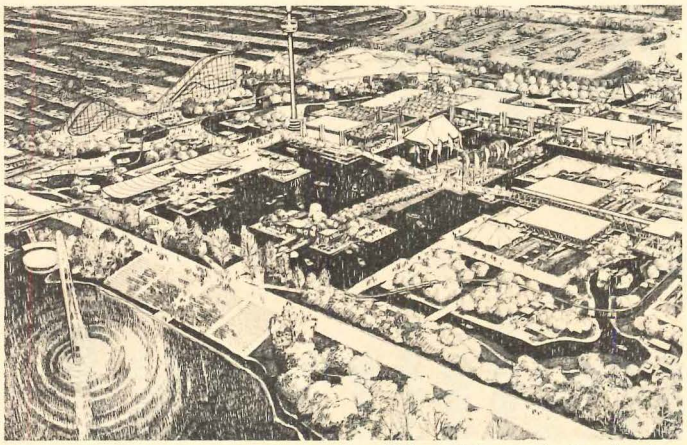




JEFFERSON COUNTY, COLO. Progressive education, unlike wagon trains, seems to lose none of its impedimenta as it moves West. Most of its excessive baggage is in terminology, as if the system itself, so heady with leavening, needs the ballast of turgid terminology. Architects Langhart/McGuire/Barngrover of Denver cut through most of this bombast to discover what one progressive school, the Prospect Valley Elementary School, meant by education that is "teamed, continuous, or non-graded" and to design a structure to house it.

Construction will get under way in August, and by the time the school opens in 1967, Prospect Valley will have a building in which "everything moves except the toilets." Inside are three, big, almost empty rooms: a cafeteria multiuse room, a primary schoolroom for 120 students, and an intermediate schoolroom for 540 students. Interior wall partitions will divide these rooms according to need. There will be no classrooms as such. "Academic stations" replace them and these are grouped around the "Instructional Materials Center." This latter space is what might be called a library, were it not for progress. By creating an intimacy of space, scale, and material on the exterior of the $584,000 masonry school, the architects have tried to dispel any lack of attachment the Prospect Valley student might have to his school—or to his Instructional Materials specialist.

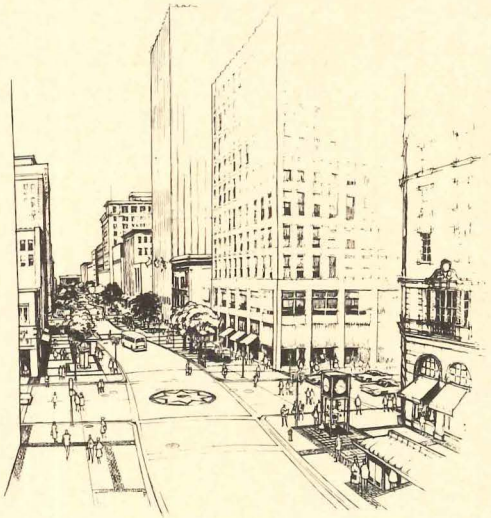
I'LL MAKE THE SACRAMENTO FAIR GROUNDS MY HOME



SACRAMENTO, CALIF. State fairs almost always seem to be in financial trouble. Two weeks in September do not provide enough revenue to keep up a fair grounds during the rest of the year, and most fairs have little if anything to lure crowds during the non-fair months. California is only one of several states trying to find a way out of this dilemma, and last month, it became the first to announce a proposed solution.

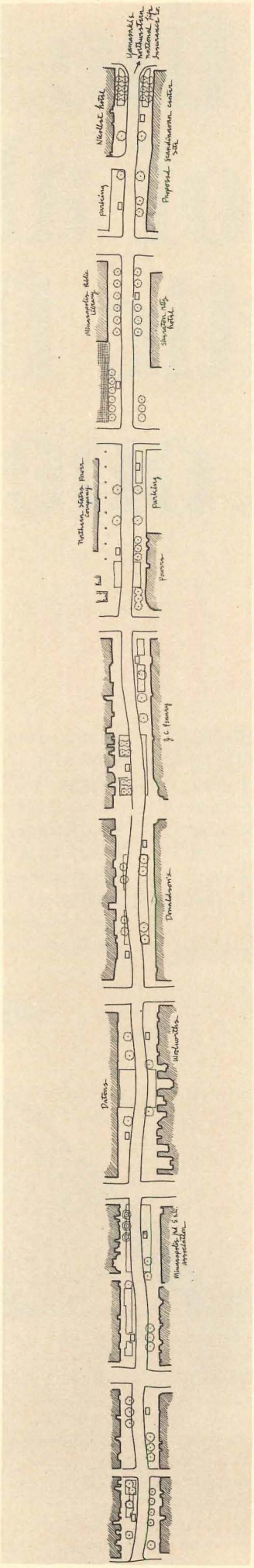
According to a feasibility study, the California Exposition and Fair will pull in 50 million visitors during its first 12 years and add $1 billion to California's economy. Scheduled to open in June 1968, the fair grounds will be open throughout the year and offer, besides the usual fair activities, an exposition center, a recreation park, an industrial exhibits area, and a race track — the first parimutuel track in California since 1958. All this will cost about $32 million. Co-ordinating designers will be Wurster, Bernardi & Emmons, and Lawrence Halprin & Associates.

WENDING THROUGH MINNEAPOLIS

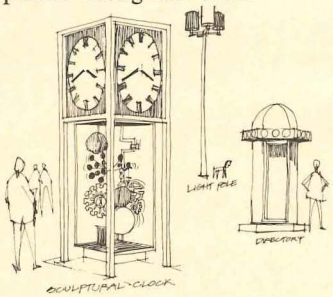


MINNEAPOLIS, MINN. Despite its climate, Minneapolis is a pleasant town in which to work and live. It's even a nice place to visit. Travelers who have come through these parts recall with nostalgia its beauty and serenity. And now, Minneapolis is going to try to improve all that.

It feels it has to; despite its assets, downtown Minneapolis is beset with the same disquieting business drain most cities are experiencing. To plug that drain, a group of concerned business leaders formed the Downtown Council of Minneapolis in the mid-50's. After years of suggestion and study, they recently announced a plan for an eight-block long mall and "transitway," in which a two-lane road, open only to buses, taxis (of which Minneapolis has few), and emergency vehicles snakes through a landscaped area between building rows.



Downtown Minneapolis has three main streets, each with a different use: one contains entertainment spots; one has most of the major office buildings; and along the third are the main shops and department stores. The shopping street, Nicollet Avenue, was singled out for the transitway, and buses will be pulled from other streets and rerouted to this one. The winding 24′-wide roadway, which wends from one side to another, never approaching closer than 15′ to a building, will help slow traffic. So will midblock pedestrian crossings, although all stop lights along the eight blocks are programmed. The planners hope buses will run in almost continuous links, forming a sort of moving sidewalk that shoppers can step onto and off with little waiting. Should a wait be necessary, however, landscape architects Lawrence Halprin & Associates have designed heated bus waiting stations. And because the cold climate limits the effectiveness of plantings, they have relied on other devices for effect. Sidewalks and road will have occasional stripes of granite blocks or brick. In addition, Halprin has designed clocks, fountains, and light fixtures that will be placed along the mall.



Barton-Aschman Associates, Inc., of Chicago worked out details of the transitway and its traffic flow. And they also solved construction problems, which, with a below-ground heating system to melt sidewalk snow, became quite complicated.

One flaw is evident at the mall's western end. Yamasaki's Northwestern National Life Insurance Company Building, designed as the terminus of the avenue, is too weak to perform this function. Its high, delicate, transparent front porch does not have the authority to close off or provide a focal point for the area.

REINHOLD PUBLISHING CORPORATION'S

ANNUAL P/A DESIGN AWARDS PROGRAM FOR PROJECTS NOT YET BUILT

PROGRESSIVE ARCHITECTURE announces the fourteenth annual Design Awards Program. Awards will be made to U.S. architects and their clients for projects now in the design stage to be built in 1967 in the United States. **Any building or group of buildings will be eligible.**

PURPOSE of the Design Awards Program is to give recognition to good design in the period of design development, rather than after completion, in order to encourage the designers and owners of the projects so honored.

FIRST DESIGN AWARD, AWARDS, AND CITATIONS may be given by the jury listed below to the best projects chosen on the basis of site use, choice of structural system and materials and methods of construction, solution of the client's program, and over-all design excellence.

JURY will be composed of the following architects, planners, and engineers: DAVID A. CRANE, Chairman, Civic Design Program, Graduate School of Fine Arts, University of Pennsylvania, Philadelphia; EDWARD D. DART, Partner, Loebl, Schlossman, Bennett & Dart, Architects and Engineers, Chicago; CHARLES W. MOORE, Chairman, Department of Architecture, Yale University, New Haven; JOSEPH R. PASSONNEAU, Dean, School of Architecture, Washington University, St. Louis; SEPP FIRNKÄS, Structural Consultant and Associate Professor of Civil Engineering, Northeastern University, Boston

JUDGMENT will take place in New York during September 1966. Winners of Awards and Citations will be notified (confidentially) immediately after the judgment.

ANNOUNCEMENT of the winning projects will be made at a presentation in the home town (if practicable) of the recipient of the First Design Award. Winning projects will be featured in January 1967 P/A. As in the past, P/A will arrange coverage of winning projects in news media, particularly those in the localities of all the Award and Citation winners.

SUBMISSIONS do not require filing of an application blank. For each project you submit, simply send:

1. On a 5″ x 8″ card, type the client's name, location, and proper name of project; name and address of the architect; and identify all items included in the submission.
2. Brief explanation of the program and your solution.
3. Description of materials and construction methods used, and the reasons for their use.
4. Site plans; basic building plans; pertinent sections and details.
5. Perspective or model photographs.
6. A statement that (a) the project is now in the design stage and that construction is anticipated in 1967, and (b) that submission of a project for judgment gives PROGRESSIVE ARCHITECTURE first rights in the architectural field to publish both the project and the finished building if it receives an Award or Citation.

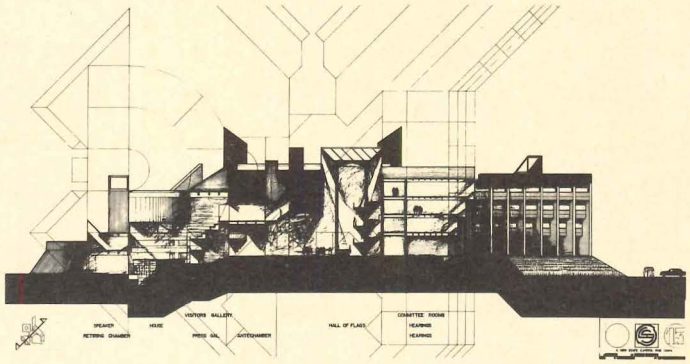
It is preferred that you submit 8″ x 10″ prints, photostats, or photographs bound in a folder. **Original drawings, actual models, or mounted exhibit panels will not be accepted and no material is to exceed 11″ x 17″ in size.** Each project is to be submitted under separate cover.

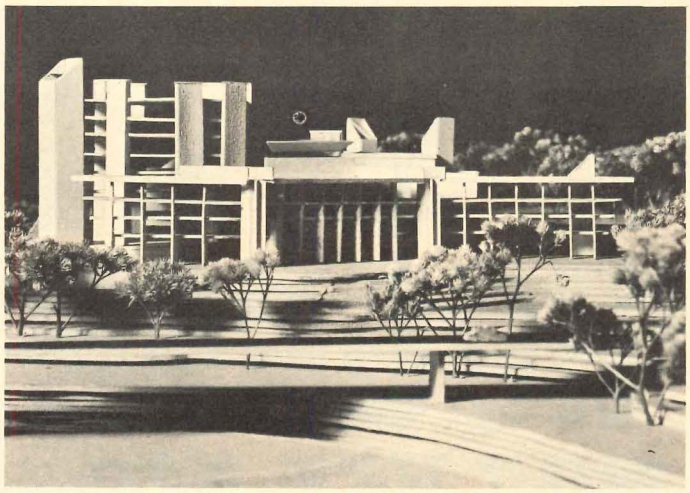
DEADLINE FOR MAILING is August 31, 1966. Address entries to Awards Editor, PROGRESSIVE ARCHITECTURE, 430 Park Avenue, New York, N. Y. 10022.

P/A will guard and return all submitted material.

Bids came in last month at a mark higher than the $2,-800,000 estimated. It is currently thought that the city may do the construction job itself. Most of the cost will be paid by merchants along the route, although the city hopes to draw on Federal beautification funds. If cost is brought into line, construction will begin this summer.

CONNECTICUT CAPITOL: A STUDENT PROPOSAL





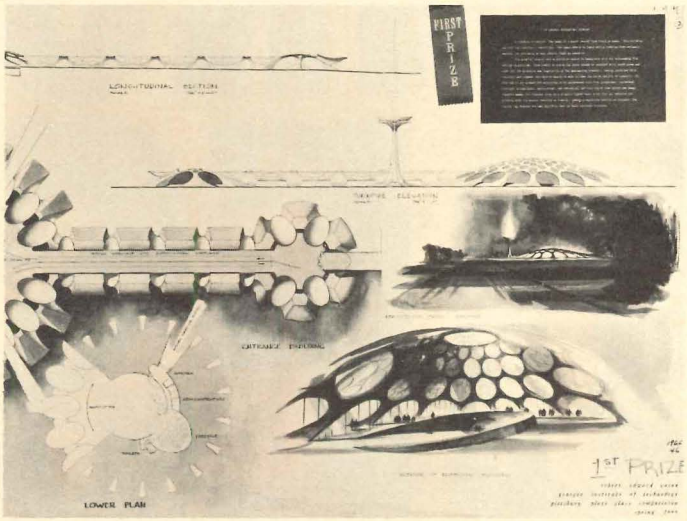
CAMBRIDGE, MASS. It is that time of year for proposals — both marital and architectural. Laurence Cutler, a candidate for a B. of Arch. at Harvard University's Graduate School of Design, submitted his proposal last semester for a new Connecticut State Capitol. The design he proposed runs counter to every design idea that Richard M. Upjohn (son of Trinity Church's Upjohn) had back in 1873, when construction was begun on the first capitol building in Hartford. The old model is of high Gothic Victorian vintage and abounds in ornate materials, heavy massing, and strict symmetry. If Cutler had his way, all this would be replaced with 20th-Century concrete plasticity, asymmetry, and surprise.

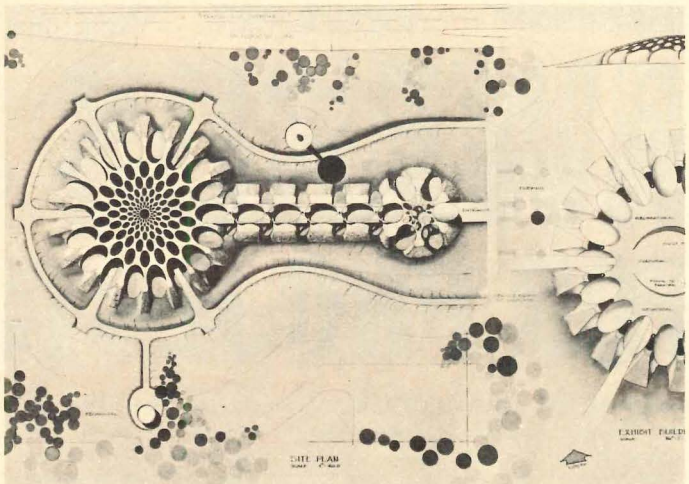
Executed under the guidance of Harvard Professors Walter Bogner and Michael McKinnell (the latter of Boston City Hall fame) and criticized by Louis Kahn, Cutler's project contains many of his mentors' design techniques. But his proposal has a number of solutions that some elder architects today might do well to remember.

Cutler, who has remarked, "I believe in exaggeration," has not bent his design to fit the mold of current high-rise civic nonentities. His model for the capitol is a striking lesson in the workings of state government. Following the old line of Jefferson and Madison, the belief in government as an arm of the people and the separation of powers as sacrosanct, Cutler placed the senate **(1)** and house **(2)** chambers in opposing blocks off a third executive quarter **(3)** and a long arm of hearings and committee rooms **(4)**. He has left the space between these four elements open, accessible to the public. Such elements as a civic amphitheater and a visitors' gallery ("Hall of the People") would bring about a much needed interaction between legislator and voter.

Cutler defines his humanistic approach further: "This approach permits each element to stand as an autonomous unit — a monad. The tension of the elements as a sculpture is offset on a human scale by the harmony of the parts. There was no need to use an architect's scale until the final stages of presentation, because the human being was the unit of measure, rather than the inch. The building dimensioned itself."

PPG STUDENT AWARDS

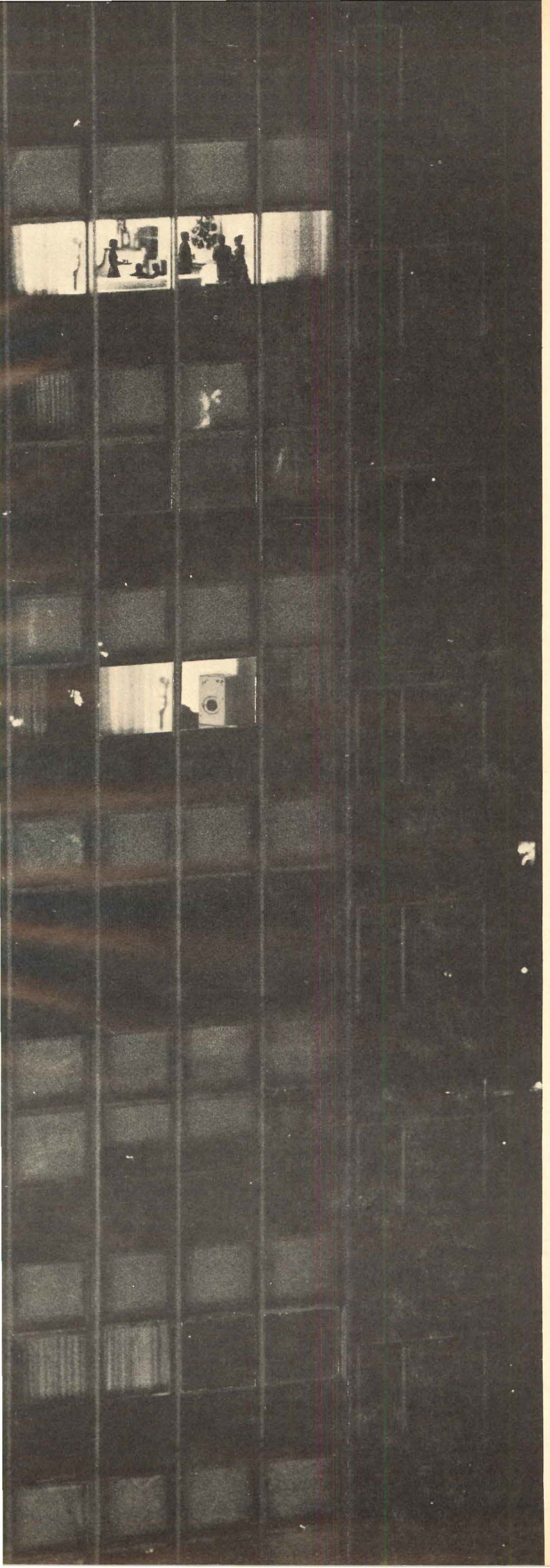




A HOSPITALITY CENTER FOR PENNSYLVANIA

NEW YORK, N.Y. A lighted candle in the window was once the beacon that welcomed horse and traveler. Speeding along today's eight-lane highways, motorists might miss a candle, so fifth-year architectural student Robert E. Eason of Georgia Institute of Technology designed a gas torch, atop a tower-like pedestal, to lure travelers toward his project for a state hospitality center. Eason's igloo-shaped structure, with its attendant torch, won first prize and $1200 in the third annual national design competition sponsored by Pittsburgh Plate Glass Company and the National Institute for Architectural Education. Of the thirteen winners in this year's competition, six were from Georgia Tech. As Eason acknowledged in his acceptance speech, a good share of the credit should go to Assistant Professor Joseph Newton Smith, who assigned the competition as a project to his fifth-year design class.

Eason's solution won praise from the jury of 11 architects for meeting the competition's requirements of a building easily seen and recognized from a distance, day or night, and for providing generous display areas with adequate circulation. Tourists enter the smaller circular building (right in rendering), then pass by moving sidewalk into larger exhibit space.



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WASHINGTON / FINANCIAL NEWS

BY E. E. HALMOS, JR.

The perennial effort on the part of Labor — it has been going on for 15 years now — to get a "common situs" picketing bill through Congress seems, as of this writing, to have failed again. As usual, it had faced determined and almost unanimous opposition from all other segments of the construction industry.

Most unusually, opposition to this year's attempt (embodied in the bill HR 10027) included a major professional society — the AIA — as well as the more usual opponents among the contractor organizations.

What Labor — specifically, the Building Trades Department of the AFL-CIO — wants so badly is the right by law to shut down an entire construction site, even if a dispute involves only one of many contractors and subcontractors on the job. This has been denied ever since an NLRB decision (in a Denver case) held that such action would amount to a secondary boycott — an action specifically forbidden by the Taft-Hartley Act.

Labor leaders have argued that this decision is basically wrong — that all employers on a construction site are in reality one employer, much as various divisions of a major corporation can be considered one corporate person. Hence a strike against one is a strike against all. But NLRB (and various courts) has held that this is not the case.

What the AIA and other professionals are concerned about are two obvious points: (1) power to shut down a whole job almost at will over some minor dispute will most certainly drive costs upward; (2) the labor unions could exercise virtual veto power over materials used in any building by simply stirring up a dispute with any supplier or manufacturer whose products or practice didn't meet union demands. Thus, architects feel, they would be at the mercy of the unions even in selection of relatively unimportant decorative materials.

The idea of amending Taft-Hartley to permit "common situs" picketing has never been popular with Congress (though it is not well understood by the general public), but it has been put forward as a sop to labor leaders at almost every election year for more than a decade. This year, it foundered (in the House) in a parliamentary horse trade within House committees — as well as on the feeling that even should the more liberal House okay it, the Senate would not.

Architects, and others concerned with the costs of construction, had good reason to be worried over anything that might further jump costs: A tabulation of major wage settlements in the industry so far this year showed that the lowest percentage increase was 6 per cent, the highest, 7.7 per cent.

Hud's Horizons — Though exact outlines of its powers are fuzzy enough, in terms of enabling legislation, the new Housing and Urban Development Department is proceeding to broaden its horizons in several directions, without any hesitation.

One is in the matter of planning for preservation of historical sites and structures: HUD said it would use "special advisory panels" that will function as a design review panel to present solutions to local problems. First such "panel" — concerned with a plan for the "Heritage Plaza East" urban renewal project in Salem, Mass. — includes three names well known to architects: Forest Allen Connally, Professor of History and Architecture, University of Illinois; Karel H. Yasko, Assistant Commissioner for Design, Public Buildings Service; Professor Christopher Tunnard, of Yale University's School of Art and Architecture.

On another front, HUD said it was ready to accept formal applications for "rent-supplement projects" — under a program whereby FHA mortgage insurance will be issued either for new construction or major rehabilitation of housing units. Such units would be for rental to low-income tenants, for whom the Federal Government would pay up to one-fourth of the monthly rental charge. (At the moment, HUD has a total of $12 million available for the supplemental rent payments, and expects applications for construction of perhaps 100,000 "supplement" housing units.)

Building Systems Research — Architects and others in the building and building-supply industry should follow details of an intergovernmental "contract" between the General Services Administration and the National Bureau of Standards' Institute for Applied Technology.

Under the contract, IAT will first study the feasibility of using portions of GSA's vast building program to cooperate with private industry "to develop new or improved building systems."

Their announced goal is to find one or more building types — common both to Government and non-Government construction — that afford an opportunity for developing "new building systems and subsystems through application of advancing technology."

First step in the program will include an analysis of user needs; second will include preparation of performance standards developed in the study.

How Do Buildings Grow? — Architects and others dealing with urban-area planning may find themselves dealing with the U. S. Department of Agriculture, if Congress finally okays a Senate-passed bill (S. 902).

Introduced by big-city members of Congress, the bill notes the rapid urbanization of farmland surrounding major metropolitan centers, and the need for proper classification of soils in newly developing areas, to prevent erosion and other damage.

Of some concern to engineering and land-planning consultants (who fear competition by Government specialists) is language in the bill permitting Agriculture to "furnish technical and other assistance needed" for full use of soil surveys.

Architects Are Not Foreign Agents — Only lawyers succeeded in getting specific exemption, by name, from terms of the 30-year-old "Foreign Agents Registration Act"; but most observers thought amendments approved by both Houses of Congress would clear architects and engineers for almost all work they might do abroad or for foreign clients.

The professionals have tried for several years to get specific exemption, on the ground that they could be forced to register as "foreign agents," even though their work had nothing to do with politics or governmental philosophies.

In the end, however, Congress broadened the "commercial exemption" in the law, to exempt "all private and non-political activities with a genuine commercial purpose, and other activities not serving predominantly a foreign purpose."

• **Financial** — Congress was running just a little ahead of schedule in pushing through regular appropriations bills of interest to the construction industry. In early July, bills already through either one house or the other, or both, included: A $2,500,000,000 Higher Education Act (with some $435 million for construction of facilities: a $10,600,000,000 appropriation for Health - Education - Welfare; $2,300,000,000 for the Atomic Energy Commission; an extra $9 billion (in authorizations) for the increased costs of the Interstate Highway system; $5 billion for NASA; $1,300,000,000 for the Department of the Interior.

• Another drop in the rate of construction of private housing units in April (a rate of 1,490,000 annually, compared to 1,550,000 a year before) accented another worry for homebuilders: a sudden, and apparently rapidly spreading shortage of loan money for housing purchases. Bankers in the Washington area, for example, were complaining that, despite some increases in interest rates, housing money just isn't "around." Thus they've had to require bigger down payments, making it harder for young couples to buy.

• The general construction economy was booming, however. In April, according to the Census Bureau, value of new work put in place was $6,100,000,000 — up 9 per cent over a year ago.

L-M STYLED MERCURY units in Kohls' Shopping Center, Racine, Wisc.

Architect: JORDAN MILLER and GEORGE WALTZ, Milwaukee, Wisc.
Electrical Consultant: E. W. WILKE, Milwaukee, Wisc.
Contractor: MAGAW ELECTRIC, Milwaukee, Kenosha and Racine, Wisc.

FOR A HARMONY OF STYLING AND A MELODY OF COLOR

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400-1000 WATTS MERCURY AND METALLIC ADDITIVE • 20,500-90,000 LUMENS
2.0 MAINTAINED FOOTCANDLES AND ABOVE

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You can add an expression of architectural design with the beauty of styling and color of Line Material outdoor lighting fixtures. Choose the architectural effect you desire with L-M fixtures styled by the noted industrial designer, Jean Reinecke. This fresh, crisp styling affords lighting installations with daytime beauty as well as nighttime lighting excellence.

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You're assured of the most efficient lighting with Line Material luminaires. Each has been engineered to provide optimum usable light. You also realize optimum economy with L-M fixtures. Long, trouble-free life is assured with all-aluminum construction and L-M's manufacturing care. In addition, accessible interiors mean easy, fast installation and maintenance.

COMPLETE LIGHTING

You can simplify organization of your entire lighting job with Line Material. In addition to luminaires—all poles, ballasts, brackets, lamps, wiring, and power supplies are available. You can obtain service and engineering assistance from your L-M Authorized Distributor. He's backed up by an L-M Field Engineer and an L-M Lighting Engineer...technical experts anxious to serve you.

LINE MATERIAL'S COMPLETE OUTDOOR LIGHTING LINE ALSO INCLUDES MEDIUM, MEDIUM-SOFT AND SOFT ILLUMINATION

TURN PAGE

CHOOSE THE STYLE AND COLOR FOR THE JOB FROM L-M'S HIGH ILLUMINATION LINE . . .

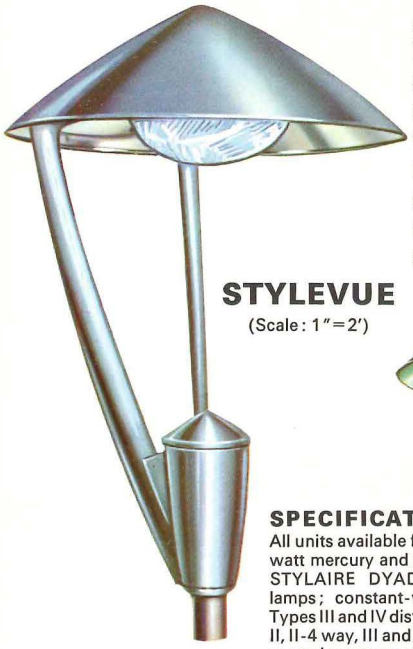
FOR SHOPPING CENTERS • PARKING AREAS • AIRPORTS • AMUSEMENT PARKS • MALLS • RECREATIONAL AND LARGE OUTDOOR AREAS • STREETS • HIGHWAYS • WHITEWAYS AND ROADWAY ENTRANCES

400-1000 watts mercury and metallic additive • 20,500-90,000 lumens

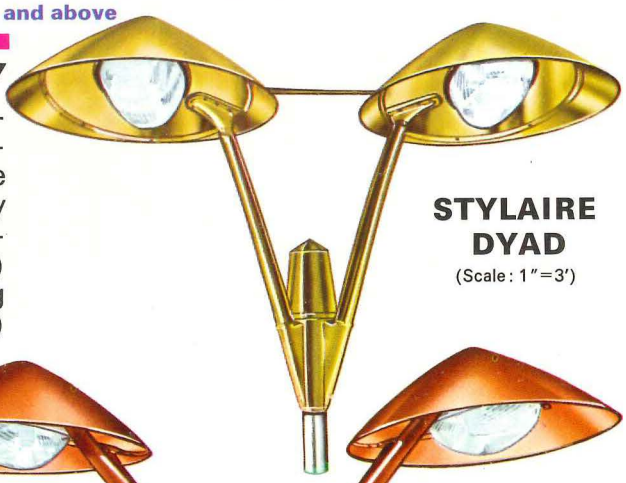
2.0 maintained footcandles and above

STYLED MERCURY

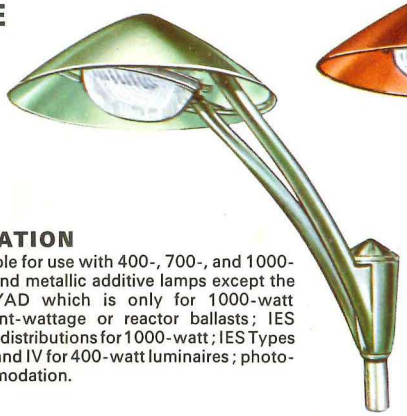
Available in 4 dramatic, sweeping designs for application variations. Available in 9 decorative colors. Plus over-all economy with 1) internal ballast eliminating external ballasting, 2) standard pole top mounting eliminating support arms, and 3) shorter poles.



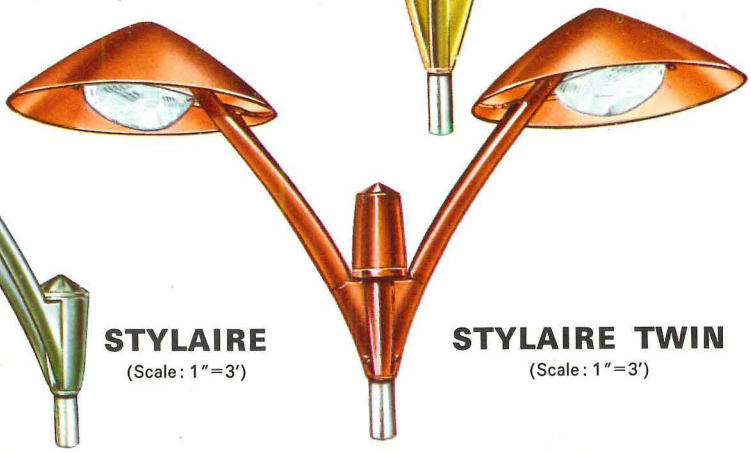
STYLEVUE
(Scale: 1″=2′)



STYLAIRE DYAD
(Scale: 1″=3′)



STYLAIRE
(Scale: 1″=3′)



STYLAIRE TWIN
(Scale: 1″=3′)

SPECIFICATION

All units available for use with 400-, 700-, and 1000-watt mercury and metallic additive lamps except the STYLAIRE DYAD which is only for 1000-watt lamps; constant-wattage or reactor ballasts; IES Types III and IV distributions for 1000-watt; IES Types II, II-4 way, III and IV for 400-watt luminaires; photocontrol accommodation.

STYLESHIELD (Scale: 1″=2′)

The same sweeping style as Styled Mercury; modern appearance plus excellent illumination. Used separately, or in combination with Styled Mercury. Available in a choice of 9 decorative colors. Designed for mounting on 2-inch supports or davit poles with a 2-inch tenon.

SPECIFICATION

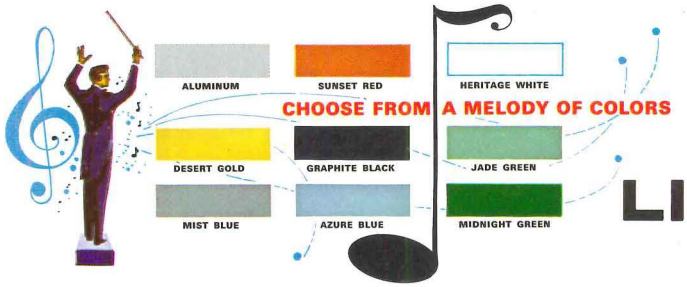
All units available for use with 400-, 700-, and 1000-watt mercury and metallic additive lamps; IES Types III and IV distributions for 1000-watt; IES Types II, II-4 way and III for 400-watt luminaires; photocontrol accommodation.

UNISTYLE (Scale: 1″=2′)

Efficient, modern appearance plus superior lighting performance. Available in aluminum finish only. Designed for 1¼-inch or 2-inch supports. Installation economy is achieved with 1) internal ballast, 2) independent leveling assembly, and 3) one-piece lower housing that readily removes for installation ease.

SPECIFICATION

Available for use with 400-watt mercury and metallic additive lamps; internally mounted constant-wattage, high-reactance, reactor or constant-current ballasts; IES Types II, II-4 way and III distributions; built-in photocontrol receptacle.



FOR COMPLETE INFORMATION on Line Material's line of outdoor lighting contact your L-M Distributor or write Line Material Industries, Milwaukee, Wisc. 53201.

693

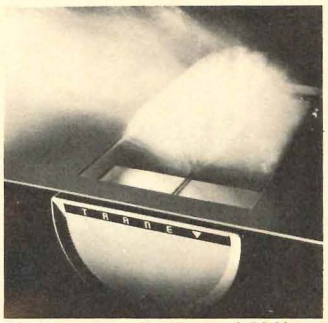
LINE MATERIAL® McGRAW-EDISON

INDUSTRIES

McGRAW-EDISON COMPANY

PRODUCTS

AIR/TEMPERATURE



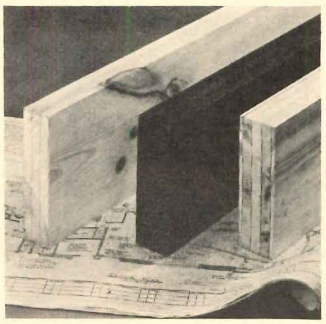
Nylon brush humidifier, mounted in furnace duct work, revolves at 1 rpm. Air from blower picks up moisture from slowly revolving brush, and clock-type motor may be automatically operated by a humidistat. All components in contact with water are noncorrosive. Brush and glass fiber pan (23 gal. capacity) can be easily removed and cleaned, says manufacturer. Suitable for residential installations. The Trane Co., La Crosse, Wis.
On Readers' Service Card, Circle 100

CONSTRUCTION

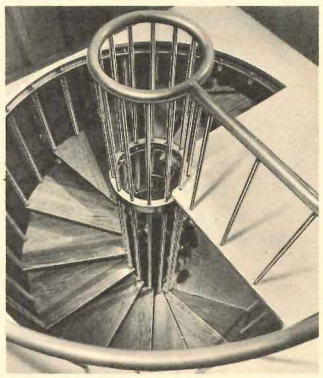
Siding, downspouts, and rain gutters of polyvinyl chloride need no painting, since white color completely permeates material. Weather-resistant, they are also resilient and are said to resist the impact of hailstones. They are lightweight and can be cut with conventional tools. Certain-teed Products Corp., Ardmore, Pa.
On Readers' Service Card, Circle 101

The Mod look in glass is clear — or clouded, as you prefer. "Pinstripe Huewhite" and "Pinstripe Polished" have been added to the "Pinstripe Finetex," which was introduced last year. The Polished is a clear glass, while Huewhite is an alabaster, glare-reducing glass. The stripes are vertical strands of bright steel wire spaced ½″ apart and embedded in the glass. All three glasses meet FHA impact test requirements for safety glass. Suggested uses include clerestories, divider walls and partitions, entrance walls, and, for Huewhite, sunscreens. American Saint Gobain Corp., P.O. Box 929, Kingsport, Tenn. 37662.
On Readers' Service Card, Circle 102

Fiery test of new glass-fiber-reinforced plastic building panels resulted in a Flame Spread Rating of 30. Alsynite "FR 30" is said to have lowest flame spread rate available in this type of plastic panel. Material is also strong, durable, and shatterproof states manufacturer. Reinforced Plastics Div., Reichhold Chemicals, Inc., 20545 Center Ridge Rd., Cleveland Ohio.
On Readers' Service Card, Circle 103



Vertical lamination makes beams stiffer and stronger reports manufacturer. Since milling loss is less on width than it is on thickness, beams laminated vertically from standard stock are deeper and narrower than horizontally laminated beams of the same nominal size. The Idaho white pine beams are available in 5-ply Premium grade with Select grade faces, 3-ply Architectural grade, and 3-ply Industrial grade. Faces are sanded, planed, or rough sawn. Potlatch Forests, Inc., Wood Products Div., 320 Market St., San Francisco, Calif. 94111.
On Readers' Service Card, Circle 104

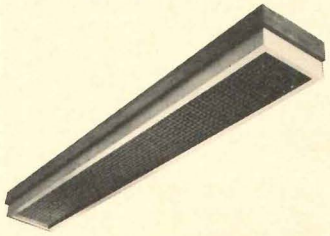


Spiral staircase, suspended from structural steel ring assembly, needs no side support at walls. Oak treads (1¼″ thick, minimum width 6″, maximum width 20″) are supported by gold-anodized aluminum tubes anchored to the steel ring. Tube spacing is designed to make handrails unnecessary. Finished opening for "Spira-Stairs" unit is 7′; spiral may turn either clockwise or counterclockwise. Pease Woodwork Co., Hamilton, Ohio.
On Readers' Service Card, Circle 105

DOORS/WINDOWS

Sliding, bi-fold closet doors have honeycomb core, hardwood fiberboard skin and a "wrap-around" vinyl surface that provides neat edges and a moisture seal to prevent warping. Standard widths and heights; linen and wood grain finishes. Woodall Industries, Inc., 130 E. 13 St., Laurel, Miss.
On Readers' Service Card, Circle 106

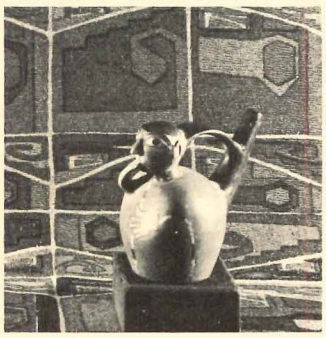
ELECTRICAL EQUIPMENT

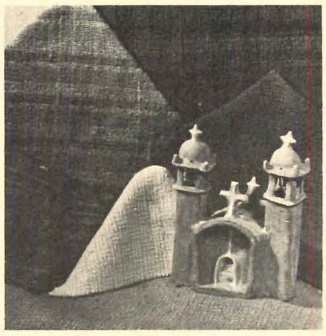


Light line offers variety of components for semirecessed, surface, pendant and wall units. Various natural wood frames and aluminum frames in red, white, or gold are available in rectangles 7″ to 48″ wide and 2′ to 8′ long; also, 2′ x 2′, 3′ x 3′ and 4′ x 4′ squares. Housing and louvers are also manufactured in several colors. An assortment of aluminum open-cell diffusers and plastic or glass lenses is available. Lens or louver frame pivots on housing for easy relamping. Neo-Ray Products, 315 E. 22 St., New York, N. Y. 10010.
On Readers' Service Card, Circle 107

Fluorescent tube, using rare earth phosphors from India and Madagascar, is said to be the first of its kind produced commercially, and is designed for superior color rendition. "Living White" provides greater brightness and a better balance between the red and the green/blue ends of the spectrum for improved appearance of skin color. Westinghouse Electric Corp., Lamp Div., Bloomfield, N. J. 07003.
On Readers' Service Card, Circle 108

FURNISHINGS





The Andean Collection, like all by Jack Lenor Larsen, is not only a collection of interesting and useful fabrics but also an adventure in textile research and a literary delight. Larsen is intrigued by the structure of fabrics as well as by exuberant colors and rich textures. The new line, Larsen's largest single presentation, takes the greatest textile culture — the Andean countries — as a point of departure, with emphasis on Peru, whose artisans seem to have

employed every fabric technique known to Western culture. Among the fabrics: "Conquistador," a twice-dyed wax batik on heavy velvet in tones of tortoise, or amethyst with bronze; "Chan Chan," a tie-dyed upholstery and drapery fabric (cotton repp) in blue and white or amber and indigo plus a flamingo colorway; "Quimbaya Crepe," wool, spun with irregular spacing in both warp and filling to produce a random filigree effect. Also several lenoweave casement cloths — the diaphanous "Inca Gold" and "Miraflores" — plus the handsome textured wool "Quito cloth." Jack Lenor Larsen, Inc., 677 Fifth Ave., New York 22, N. Y.

On Readers' Service Card, Circle 109

From mighty oak trees comes Avard's collection of cabinets, tables, desks, and seating pieces, designed by Darrell Landrum. Finishes may be black-ebonized or bleached white as well as natural. Most interesting: solidly constructed chair (shown) and chaise with oak frame designed to complement Arturo Maturo's buffalo check fabric (Woolrich Mills). Avard, Inc., 353 E. 62nd St., New York, N. Y.

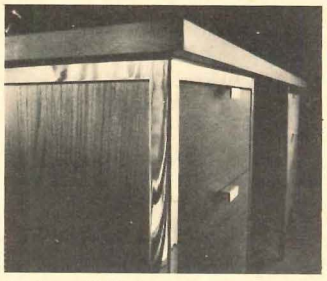
On Readers' Service Card, Circle 110

Better lectures — clarity and comfort, if not in content — is the purpose of two items from the American Seating Company. For the prof, a mobile projector lectern permits use of demonstration materials from an overhead projector without moving from the stand. Lectern is plastic laminate with vinyl surfacing. Projector is stored in one side after use. For the student, a self-rising injection-molded, contour, polyethylene plastic chair that is also suitable for outdoor use. Manufacturer claims easy upkeep cuts maintenance costs considerably; several optional units. American Seating Co., Grand Rapids, Mich. 49502

On Readers' Service Card, Circle 111

The eye of Magna-Lite's upon you — a permanent magnet holds the 5½″-dia. spot, which may be lifted off, then replaced at whatever angle is convenient. This latest of an originally Italian idea is available as a wall-mounted unit as well as a pendant; the stem is brushed aluminum with a black or brushed nickel-finished sphere. Prescolite Lighting, 1251 Doolittle Dr., San Leandro, Calif.

On Readers' Service Card, Circle 112



Robert John's new showroom exhibits additions to their established furniture lines: "Ultra Five," furniture for executive areas with cantilever leg system, scratchproof "Densedge" on desk tops, flush drawers and doors; "Steelwood," (shown) with a structural steel framework supporting a wood cabinet; "Pennwood," clean all-wood design for general office use. Also, modular and multiple seating arrangements, chairs, planters, and tables; an upholstery program of 148 fabrics, leathers, and vinyls. Robert John Co., 305 E. 63rd St., New York, N. Y.

On Readers' Service Card, Circle 113

Additional cover-up items from Comark: for walls, tiny chips of actual cork laminated to a stable fabric backing. Available in continuous rolls (48″ wide) for the first time. the material is applied like any roll wall covering. Offered in three tones of brown. For upholstery, vinyl "patent leather" is a possibility. The vinyl has a soft hand and is available in five blazing solid colors or a tortoise pattern. (Button tufting is advised to cut glare.) Comark Plastics Div., Cohn-Hall-Marx Co., 1407 Broadway, New York 18, N. Y.

On Readers' Service Card, Circle 114

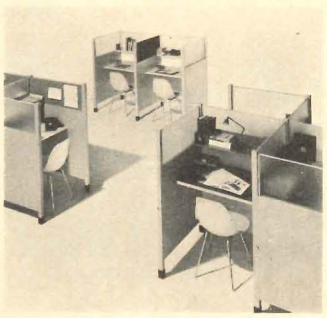
OFFICE EQUIPMENT

Push a few buttons and wait four seconds. This microfilm reader will retrieve the one page out of 67,500 that is needed and project it on the screen to the left. The compact desk unit (16″ high, 22″ wide, 21″ deep) contains 750 filmcards with 90 microfilmed pages per card. The card magazines can be interchanged with magazines kept in storage. A hard copy printer and other optional equipment is available. Houston Fearless Corp., 11801 W. Olympic Blvd., Los Angeles, Calif. 90064.

On Readers' Service Card, Circle 115

DE-600 desk-top computer combines "the power of a computer with the operational simplicity of a calculator." Operator uses algebraic symbols and 10-key keyboard. Answers are printed to 18 decimal digits on an electric typewriter. Program library includes specialized programs for civil and structural engineering problems. Computer plugs into standard outlet and does not require special cooling. Computer Div., Clary Corp., 408 Junipero, San Gabriel, Calif. 91776.

On Readers' Service Card, Circle 116



Roving carrelers can be handily accommodated in movable booths using a new system that is suitable for library and school study carrels, language rooms, etc. Three partitions form one booth, but for multiple booths, partitions can form common dividers. Manufacturer suggests partitions can also be used for temporary work stations in offices, factories, or warehouses. Universal posts, interchangeable panels and re-usable components; 36″ x 36″ x 54″ high, in 13 colors. Rockaway Metal Products Corp., 175 Roger Ave., Inwood, N. Y. 11696.

On Readers' Service Card, Circle 117

SPECIAL EQUIPMENT

Many "Mini-Signs" are made by mcPhilben in Melville. Minimum measurements are the main feature of the miniature directionals. The 5¾″ square x 1⅞″ deep dimensions accommodate many combinations of letters and numerals. Aluminum frame with molded acrylic diffuser; lamp life multiplier for minimum maintenance; 15-w standard lamps. mcPhilben Lighting, 270 Long Island Expressway, Melville, N. Y. 11746.

On Readers' Service Card, Circle 118

Specified in MORE and MORE fine construction..

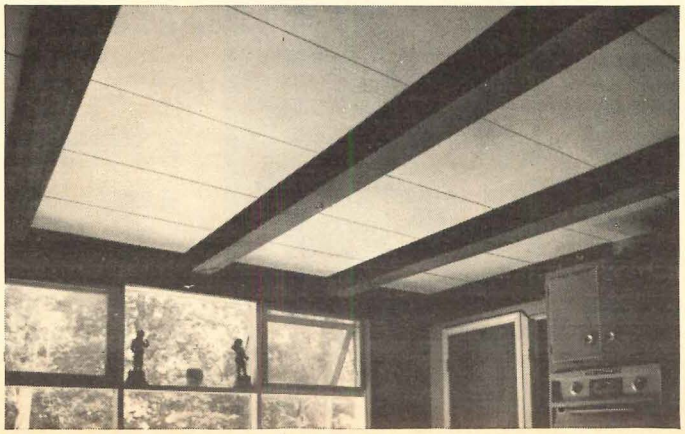
NOW AVAILABLE!
U/L RATED HOMASOTE FIRE RETARDANT PANELS
See Bulletin U/L 091

because...

POUND FOR POUND HOMASOTE "EASY-PLY" ROOF DECKING

OFFERS ALL THE SPANS, THICKNESSES, AND FINISHES YOU'LL EVER NEED FOR ANY KIND OF DECK! Four thicknesses: 15/16"; 1⅜"; 1⅞"; 2⅜"... for four spans: 24" o.c.; 32" o.c.; 48" o.c.; 60" o.c. Finishes: acrylic white and beige; white Kraft with vapor barrier; white or wood-grained PVF Film vapor barrier; U/L rated Fire Retardant finishes; natural grey. Special colors and films to order. Ideal base for any type of roofing, plus pre-finished interior—with a single specification, a single installation.

Additional features: weatherproof . . . resistant to termites, rot, and fungi . . . constant insulating and sound-deadening values . . . superior structural strength.



6-027

FREE: For complete details on why Homasote "Easy-Ply" Roof Decking is specified in more and more fine construction, ask for Building Product Selector 6-047. Write Dept. G-4

homasote Company
Trenton, N. J. 08603

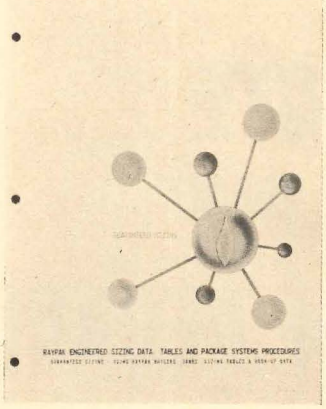
On Readers' Service Card, circle No. 352

MFRS' DATA

AIR/TEMPERATURE

In a Class by Itself. Self-contained units offer individual control of classroom temperatures. Seven under-the-window models include electric, steam, or hot water heating units that may either be installed with refrigerating coils, or equipped for the future addition of a cooling assembly; units may also be specified for cooling only. Manufacturer makes models using 20% or 100% outside air. Booklet includes exploded views, technical data charts, control information, wiring schematics, dimension details, piping diagrams, and specifications. 32 pages. American Air Filter Co., Inc., 215 Central Ave., Louisville, Ky. 40208.

On Readers' Service Card, Circle 200



Sized to Fit. Tables enable designer to size boilers, storage tanks, and associated equipment for supplying domestic hot water in several types of commercial buildings and for swimming pools. Charts also include central heating and domestic hot water combination systems. 8 pages. Raypak Co., Inc., 2430 Chico Ave., El Monte, Calif.

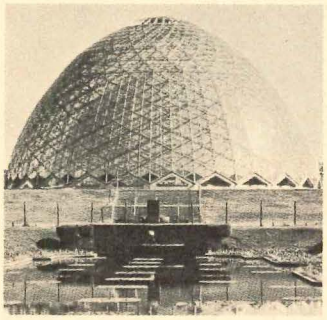
On Readers' Service Card, Circle 201

Controls for electric heating in commercial buildings are described in two pamphlets: 44-page "Electric Heating Controls" covers **(1)** primary equipment, and **(2)** auxiliary equipment to be used in combination with primary controls. Application, shop drawings, and specifications are given for a number of thermostats and controllers. Schematics, tables, photos.

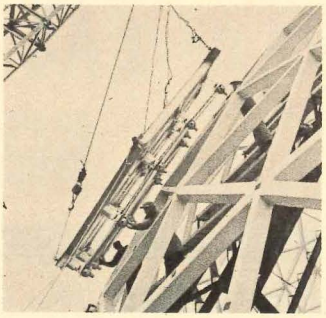
16-page "Technical Data" includes information on electric heating sources, elements, and heaters, as well as single- and multi-stage controls and proportional controls. Appendix discusses power and distribution, load current calculations, and peak load control. Descriptions, schematics, and tables. Honeywell Commercial Div., 2727 S. Fourth Ave., Minneapolis, Minn. 55408.

On Readers' Service Card, Circle 202

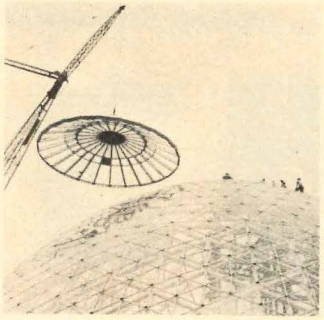
CONSTRUCTION



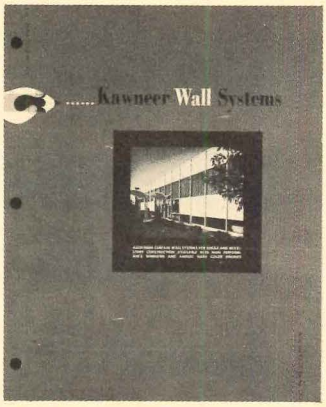
Double web creates an airy frame for three egg-shaped domes at the Mitchell Park Horticultural Conservatory in Milwaukee. Outer web of



preglazed, extruded aluminum units is arc-welded to steel plates embedded in the inner web of reinforced concrete. The structural framework of each dome comprises 225 precast units, making 25 orange-peel sec-

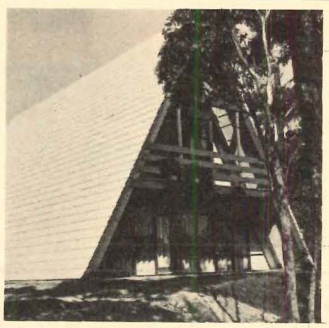


tions based on the hexagon, the diamond, and the triangle. These sections form a self-supporting conoidal dome 140′ in diameter and 85′ high at the apex — a shape that was chosen to allow space for tall trees and to avoid collection of heavy snows on the top. Inside two buildings are re-creations of arid and tropical climates; the third is for "show" exhibits. A fourth conservatory is planned for temperate zone plants. Simple text and excellent construction photos in color brochure trace the history of the domes, and explain the design problems of architect Donald L. Grieb, his associates, and the fabricators. The story spans 10 years, starting with preliminary talks in 1955 and ending with the dedication by Mrs. Lyndon B. Johnson in September 1965. 28 pages. $1. The Milwaukee County Park Commission, 901 N. Ninth St., Milwaukee, Wis. 53233.



Aluminum curtain wall systems for single and multistory construction have anodic alloy color finishes. Systems will accept glass, window, panel, and door components. Short descriptions, mullion details, and photos of actual installations are given for six different systems. 8 pages. Kawneer Co., Inc., 1105 N. Front, Niles, Mich. 49120.

On Readers' Service Card, Circle 203



Extruded concrete roof tiles are being manufactured in 12 standard colors by a new California company formed jointly by an Australian and an American firm. The tile, 16¾″ x 13″ with an interlocking side lap of 1¼″, has a curved center rib and two water channels. A roof of these tiles is said to weigh less than a clay tile roof because of the greater coverage per tile. They are now being marketed in southern California. Installation details for ridge and valley, flat and pitched roofs; color photos. 8 pages. Monier-Raymond Concrete Tile Co., 13739 Sampson Ave., Corona, Calif.

On Readers' Service Card, Circle 204

Floor-to-Ceiling Walls Are Easily Moved. Four wall systems for dividing interior spaces in commercial, industrial, and institutional buildings are designed for easy relocation. A 2¼″ sandwich of two steel sheets packed with rockwool forms panels for two full-height systems—one finished in baked enamel and flush-joined to universal posts; one finished as specified, and joined by recessed reveals. New low-cost system is made up of full-height steel and gypsum panels, 3″ thick with hollow core. Partial height divider walls are also available. Doors, hardware, and glazing are shown for all systems. Photos, installation and detail drawings, and specifications. 32 pages. The E. F. Hauserman Co., 5415 Grant Ave., Cleveland, Ohio.

On Readers' Service Card, Circle 205

DOORS/WINDOWS

Rolling metal doors and grilles for garages, shop fronts, etc., are available in steel, aluminum, stainless or bronze and can be manually or motor operated. Also in-

FOUR STRUCTURAL SYSTEMS COST STUDIED TO DETERMINE MOST ECONOMICAL

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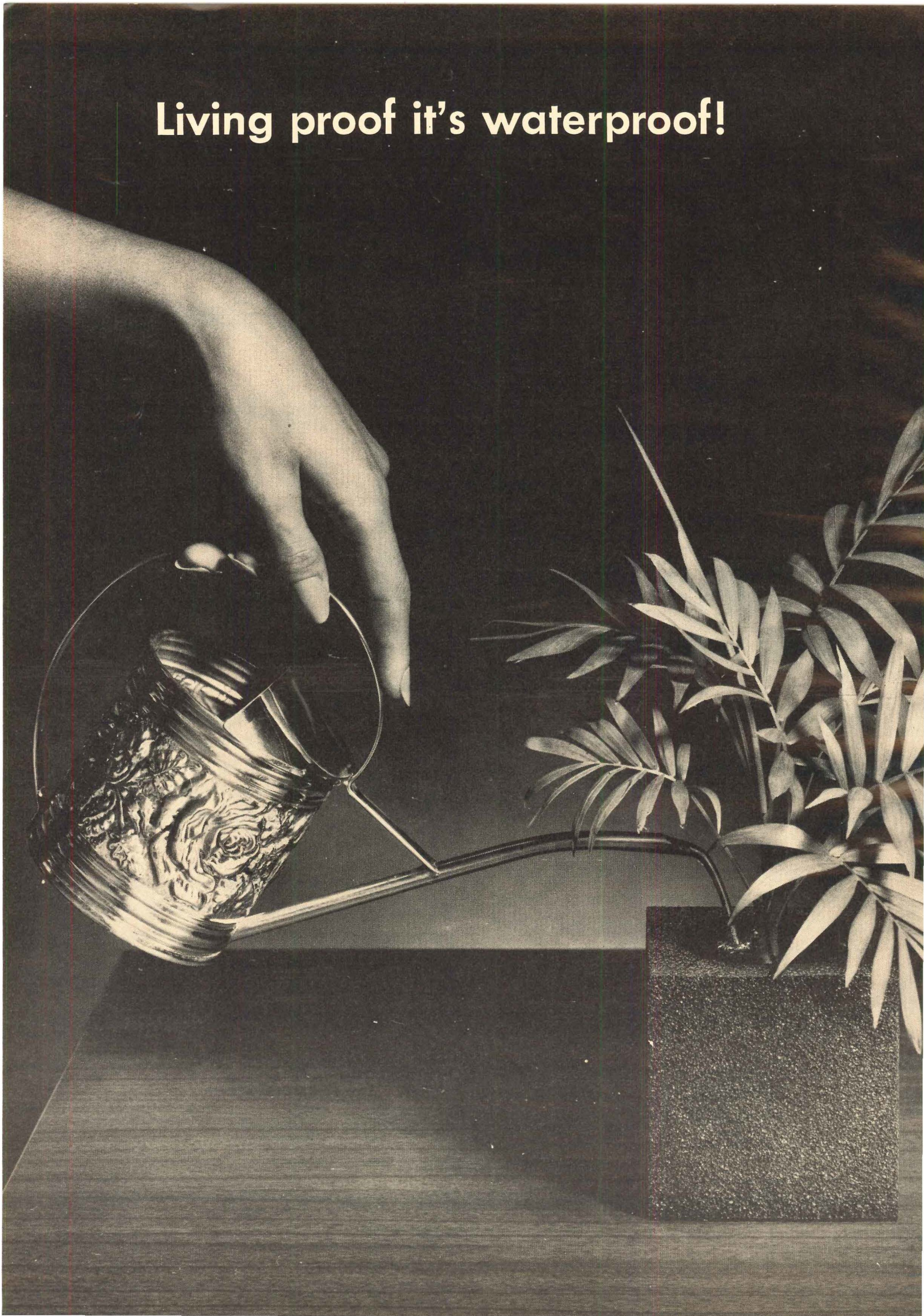
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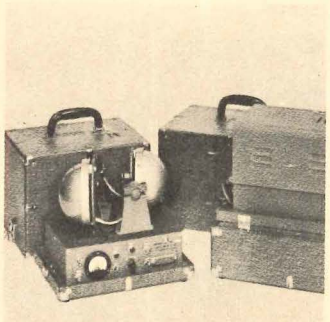
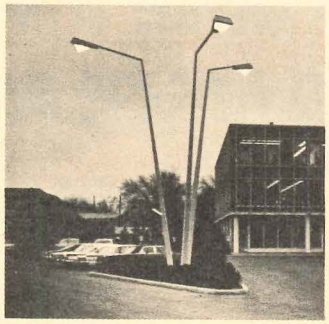
cluded in catalog are color vinyl-clad sliding grilles for inexpensive, minimum security installations. Photos, detail drawings, size charts, specifications. 12 pages. Cornell Iron Works, Inc., Crestwood Industrial Park, Wilkes-Barre, Pa.
On Readers' Service Card, Circle 206

Divider door is a double accordion that folds against the wall. Heavy gage vinyl hinges join the 7½" wood core panels, which are also wood veneered. Top and bottom sweeps seal the perimeter; and sound-dampening material lines the inner surface of each panel, giving the door an acoustical rating of STC 36ASTM. Heights to 12'-1"; single-unit widths to 30'. Data sheet has specifications, description, and dimension drawings. Panelfold Doors, Inc., 1090 E. 17th St., Hialeah, Fla. 33010.
On Readers' Service Card, Circle 207

ELECTRICAL EQUIPMENT



Alarm system saturates a protected area with ultrasonic energy. Any movement interfering with the sound waves, which are above the range of human hearing, trips an alarm signal. System may be installed with either local or remote alarm signal; also available is a portable system (shown), which can be set up in a "very few minutes." Suitable for museums, schools, department stores, etc. Brochure lists components and gives schematics. 4 pages. Walter Kidde & Co., Inc., 675 Main St., Belleville, N. J. 07109.
On Readers' Service Card, Circle 208



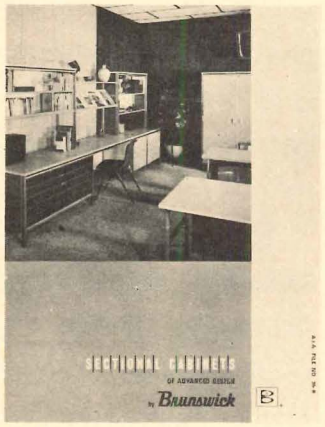
Post lamps for mall and other outdoor lighting are available in three pole types and five luminaire styles. Poles are 10' to 38' high and are called "Straight," "Reverse Cant," and "Canted Davit" (shown). Conventional mercury lamps, metallic-vapor lamps, and also the "Lucalox" (recently introduced by G.E.) may be used in the aluminum fixtures. A 2' Canted Davit pole is available for lighting walkways. Descriptions and photos. 4 pages. Revere Electric Mfg. Co., 7420 Lehigh Ave., Chicago, Ill. 60648.
On Readers' Service Card, Circle 209

Music-intercom systems are designed to be built into walls. Master control station with amplifier and AM/FM tuner, speakers for intercom/music, and "Fold-In-Wall" record changer or tape recorder/player are some of the components that can be used in various combinations. Music is automatically silenced when intercom is being used. Catalog lists components, has photos, and gives simple installation schematics. Nutone, Inc., Madison and Red Bank, Cincinnati 27, Ohio.
On Readers' Service Card, Circle 210

FURNISHINGS

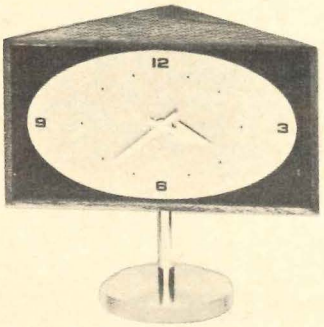
A carefully calculated gadget, slide rule enables precise selection and correct use of accent and display lighting for art galleries and museums, stores and churches. Geared to Lightolier's "Lytespan" series, the calculator determines such data as: what size and shape spot to use with a specific wattage, the height of a light beam for different angles and distances, safe electrical loads for lengths of electrified tract, accessories. Lightolier, Dept. SR-1, 346 Claremont Ave., Jersey City, N. J.
On Readers' Service Card, Circle 211

John Stuart's "architective" furniture is displayed in a hard-cover looseleaf book that features a varied Danish collection, including good upholstery fabrics and many designs by Finn Juhl; also a polypropylene stacking chair (shown) designed by Robin Day. Tab indexes provide easy access to sections on desks and cabinets, tables, seating, and special contract orders. Mailing cards in the back of the catalogue are calculated to enlist the architect's cooperation in keeping it up to date. Replacement pages are available on request. $10 charge, refundable after orders exceeding $500. John Stuart, Inc., 205 E. 58th St., New York, N. Y. 10022.
On Readers' Service Card, Circle 212



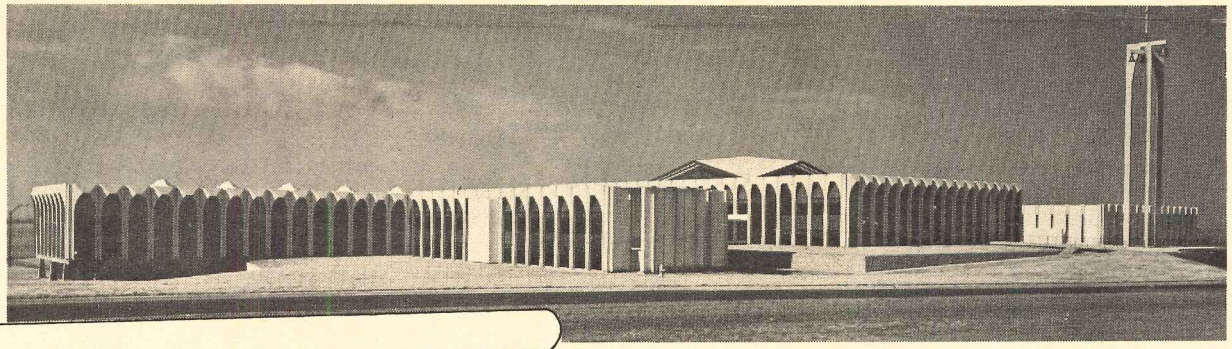
Cabinets for schoolrooms come as modular pieces that permit flexibility of rearrangement. Cabinets for counters, floors, walls; cabinets with sinks, drawers, tote trays; sliding or hinged doors; stacking — more than 1200 stock units, 50 accessory items, all with adjustable shelves. Frames of tubular steel, laminate tops; doors in five colors and walnut. Measurements, illustrations, photos, and specifications. Complete table of contents. 54 pages. Brunswick Corp., 2605 Kilgore Rd., Kalamazoo, Mich. 49003.
On Readers' Service Card, Circle 213

The light idea is the bright idea here — and it can be the right idea if a selective eye examines these 90 pages of glowing photos and prose. Some plain, good designs available for all areas, including a luminous ceiling system and recessed lighting. Measurements and data. John C. Virden Co., 6103 Longfellow Ave., Cleveland, Ohio 44103.
On Readers' Service Card, Circle 214



This time machine is not something out of H. G. Wells but is part of the Meridian Clock line, and is designed to keep many interiors in the giddy present. The Howard Miller catalogue features designs by Arthur Umanoff Associates and Italian imports, and concentrates on wall clocks, some with brightly decorated faces, others pleasingly simple. There is a combination magazine rack-clock, an abstract painting-clock, and kooky desk models. All either electric or battery operated. Black-and-white photos, measurements, data and prices. 20 pages. Lighting Associates, Inc., 351 E. 61st St., New York, N. Y.
On Readers' Service Card, Circle 215

Koch & Lowy's lighting goes under cover — of brochure, that is — showing 60 pages of imports and American designs. Most intriguing are Dutch designs by Raak; brilliant glass shapes from Italy by Vistosi. Index covers wide range of good American designs: ceiling and wall fixtures, table and floor lamps, cylindrical reflectors and spots, and



A HILLYARD SPECIFICATION FOR SEALING AND FINISHING SLATE FLOORS

Savior of the World Seminary Chapel, Kansas City, Kansas. Architects: Shaughnessy, Bower and Grimaldi, Kansas City, Missouri. Cem-Seal was applied for protection during construction and installation of pews. (In progress above). After pews were installed, two thin coats of Super Hil-Brite carnauba wax provides the wearing surface.

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PRODUCT DESCRIPTION: A modified clorinated rubber sealer. Recommended to properly cure concrete. It is commonly used to fill and seal porous masonry-type floors. Protects surface, improves appearance and provides base for final wax or finish coats.

SPECIFICATION AND HOW TO APPLY: Onto a perfectly clean, stain-free floor, apply Cem-Seal in an even coat with lamb's wool applicator. Avoid puddling. After drying thoroughly, apply two thin coats of Super Hil-Brite carnauba wax with a new lamb's wool applicator, again being careful not to puddle. On large, open exterior areas, Cem-Seal may be sprayed.

DRYING TIME: Cem-Seal—two hours in normal weather conditions; Super Hil-Brite wax – 30 minutes.

COVERAGE: 500-700 square feet per gallon depending upon the porosity of the floor.

TECHNICAL DATA: N.V.M.—20%. Viscosity—Gardner A-2—A-5. Color—Gardner max. 6. A clear liquid with no sediment or suspended matter. The product shall comply with ASTM C156-55T, water retention efficiency of liquid membrane forming compounds for concrete curing.

GUARANTEE: When applied in accordance with manufacturer's directions, it is guaranteed to meet all claims made.

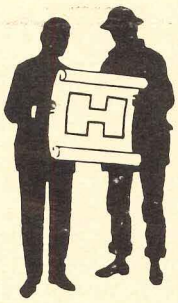
MAINTAIN WITH THESE HILLYARD PRODUCTS: Sweep daily with a Super Hil-Tone treated dust mop. Buff periodically. When floor is soiled, clean with Super Shine-All or with Clean-O-Lite (if a cleaner-sanitizer is desired). Traffic lanes may be patched in with Super Hil-Brite carnauba wax and buffed to blend with entire floor.

APPROVALS: All Hillyard products mentioned are listed by the Underwriters' Laboratories as slip resistant.

EXCEPTIONS: Do not use Cem-Seal on light-colored masonry type flooring. Contact Hillyard for specification.

REFERENCES: Sweet's Architectural File, A.I.A. Building Products Register, Hillyard A.I.A. File No. 25G.

A certified Hillyard Architectural Consultant will gladly discuss with your specification writers the proper, approved procedures and materials for the original treatment of any type floor you specify. He'll also provide free follow-up "job captain" service to protect your specifications. Write, wire or call collect.



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a portable magnetic wall light. Special designs can be converted into working drawings for quotation and approval. Measurements and data, price list and specifications. Koch & Lowy, Inc., 201 E. 34th St., New York, N. Y. 10016.

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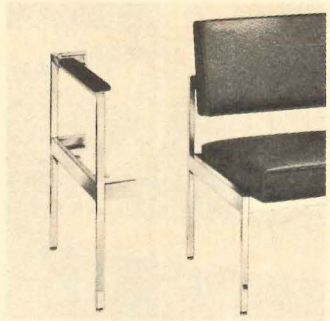

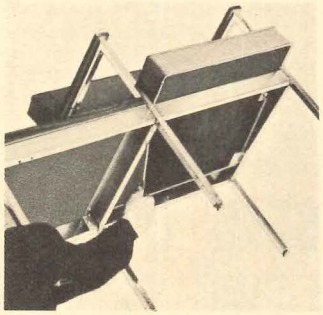

Versatile furniture = 26 units + screwdriver with the "440 Series" from Steelcase, exhibited in 10-page color catalogue. Modular pieces include chairs (with or without detachable arms), benches, and tables; all may be locked together. Frames have extra-heavy chrome plating, tabletops of self-edged plastic laminate. Arrangements, diagrams, measurements. Steelcase, Inc., Grand Rapids, Mich.

On Readers' Service Card, Circle 217

Howe-to-do book shows Howe set-up and fold-down tables for conference rooms, hotels, schools, dining rooms. Table of contents and tab indexes

enable easy location of tables for specific areas and needs. Tables ordinarily requiring cloths or felt pads now come topped with "Howefoam" — a resilient polyvinyl chloride that, manufacturer claims, is nonstainable, easily cleaned, and gouge-resistant. Photos and diagrams, measurements and materials, complete specifications. 30 pages. Howe Folding Furniture Co., Inc., 360 Lexington Ave., New York, N. Y. 10017.

On Readers' Service Card, Circle 218

Office furniture and equipment catalog lists everything from wastebaskets to partition systems. Chairs, desks, duplicators, filing systems, conference tables, in-out boxes, shelving, etc., in a host of styles, colors, prices. Wood furnishings are included for the first time by this manufacturer. Color photos, dimensions, prices. 116 pages. Cole Steel Equipment Co., 415 Madison Ave., New York, N. Y. 10017.

On Readers' Service Card, Circle 219

Primarily for Patios. Illustrated booklet presents 12 styles of Molla's indoor-outdoor furniture—chairs, tables, chaises, and even lamps. Many are done in Victorian styles with sea horses and curlicues though frames of all but two are, incongruously, of cast aluminum or alumaloy; the latter makes a more effective frame for the neat "Celebrity" series with suspended basket-weave design. Price list, measurements, color chart for metal finishes and upholsteries. 60 pages. Molla, Inc., 110 State St., Westbury, N. Y.

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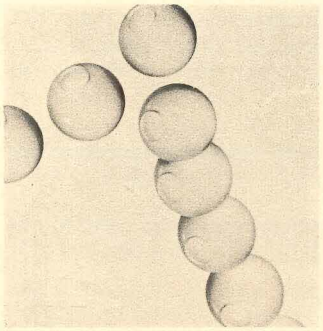
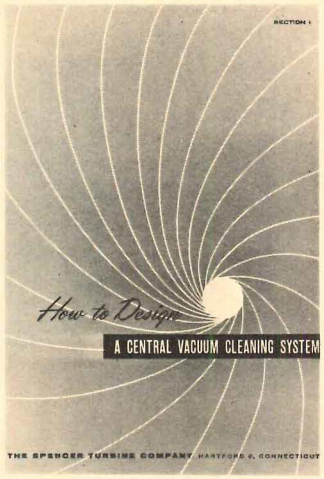


Well-rounded lighting for indoors or out is offered in companion catalogues from

Habitat. The plastic globes are said to look like glass and be virtually unbreakable (they bounce if dislodged). Globes are available from 6″ dia. to 36″ dia.; surface, ceiling-, wall-, and (for outdoor use) post-mounted; pendants and wall brackets; translucent white or colors. A variety of fittings, globes with open and closed bottoms. Measurements and data, price list. 18 pages, total. Habitat, Inc., 336 Third Ave., New York, N. Y. 10010.
On Readers' Service Card, Circle 221

SPECIAL EQUIPMENT



Vacuum Cleaning Systems. Design booklet for vacuum-cleaning systems provides information on sizing lines, calculating system losses and vacuum requirements, and selecting valves, motor, and bag or centrifugal separator. Systems available (1) valve-and-house, (2) "Vacu-Slot" (in the floor with no hose connection), (3) "Mop-Vac" for hospitals, and (4) a combination system that integrates the features of the other three systems. Sizes range from 3-hp units for use by a single operator to 100-hp units for 50 operators. Graphs, specs, and a work sheet included. 12 pages. The Spencer Turbine Co., Hartford 6, Conn.
On Readers' Service Card, Circle 222

Built-up roofing manual is offered as specifications guide, and begins with a simplified "Specification Index" charting construction, U.L. ratings, etc. Requirements for nailable and nonnailable decks, lapping and mopping instructions, steep deck application, and roofing over existing roofs are discussed. Text and installation drawings. 20 pages. The Philip Carey Mfg. Co., 320 S. Wayne Ave., Cincinnati, Ohio 45215.
On Readers' Service Card, Circle 223

Folding bleachers for gymnasiums are operated electrically or mechanically. Frames are cross-braced scissor construction supporting seat boards tilted slightly backward for spectator comfort. "Adult Seating" is available with a wood back rest — padding optional. Mobile indoor units, portable bleachers for indoor-outdoor use, and gymnasium accessories including basketball backboards are also covered in brochure. Photos, descriptions, seating capacity and dimension charts, brief specifications. 30 pages. Berlin Seating, Inc., P.O. Box 470, Waupun, Wis. 53963.
On Readers' Service Card, Circle 224

Parking lot plans for 1966 cars, and metal saddles for holding timber barriers to stop wheels are described in booklet. Critical dimensions for standard make cars are charted; other information given includes plan patterns for 90°, 60°, and 45° angle parking, specs, and photos. 32 pages. Harris-Barrier, Inc., P.O. Box 88243, Indianapolis, Ind. 46208.
On Readers' Service Card, Circle 225

SURFACING

Congoleum by Candlelight. A hard-cover book from Congoleum-Nairn is tab-indexed for six general floor types and an information section (maintenance, specifications, comprehensive index). You may be amused to note that they still make floral printed Congoleum rugs, which are almost old enough to be "Pop rugs." Congoleum-Nairn, Inc., 195 Belgrove Dr., Kearny, N. J.
On Readers' Service Card, Circle 226

PROGRESSIVE ARCHITECTURE
NEWS REPORT

REINHOLD PUBLISHING CORPORATION
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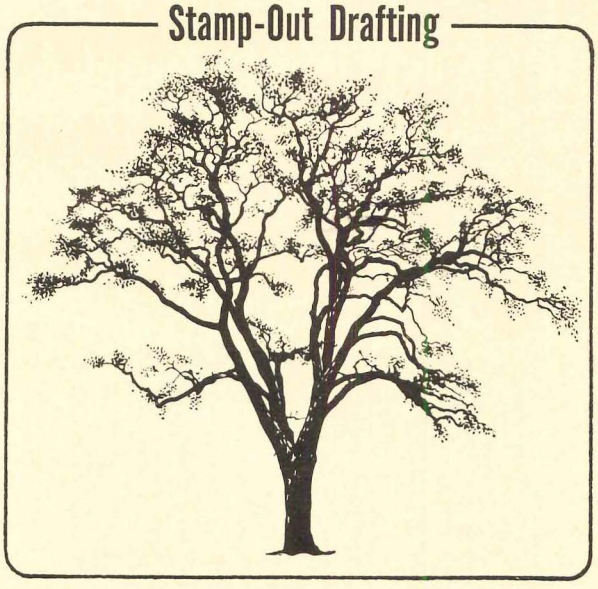

A new line of rubber stamps is now available for the architectural draftsman. Trees, shrubs, people, cars, buses, trucks, planes, birds, nomenclature and arrows are made in scales from 3" to 1/16". Stamps are fabricated in both plan and elevation from over 600 different illustrations. For information circle reader service card number or write to:

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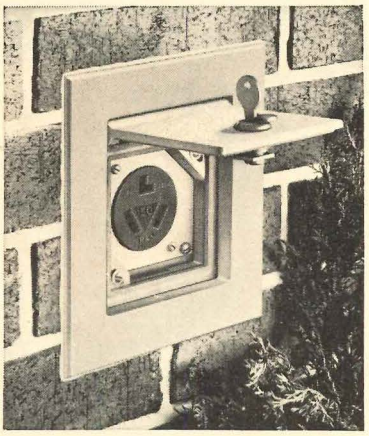

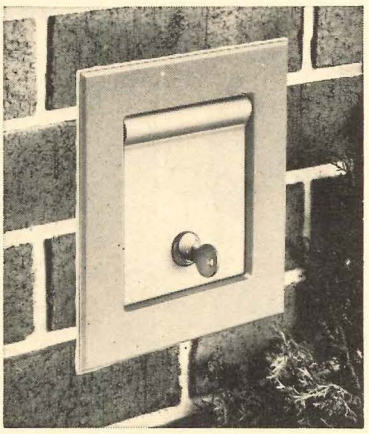

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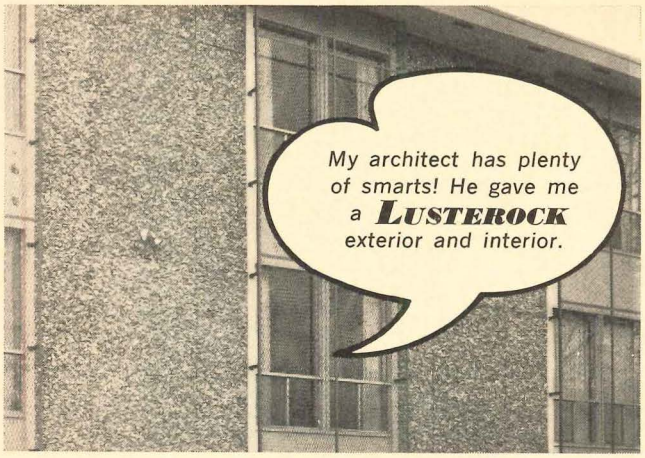

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REINHOLD

DESIGN AND FORM: THE BASIC COURSE AT THE BAUHAUS
by Johannes Itten.
7¾ x 10¾. 200 pages. 160 illustrations. $12

A complete description of the content and purpose of the famous "Introductory Course" at the Bauhaus, by the man who established it. Used as a trial semester to judge incoming students of varying educational backgrounds, the purpose of this course was threefold: to determine creative talent; to facilitate choice of career; to teach elementary design.

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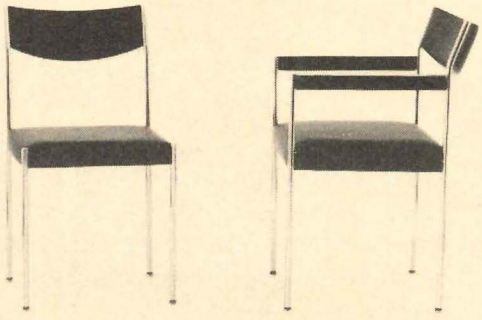
...talk about chairs



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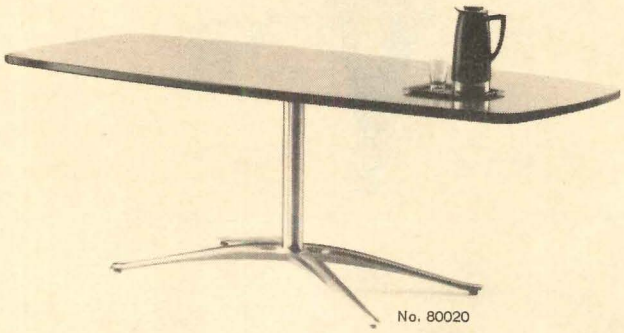
...talk about tables



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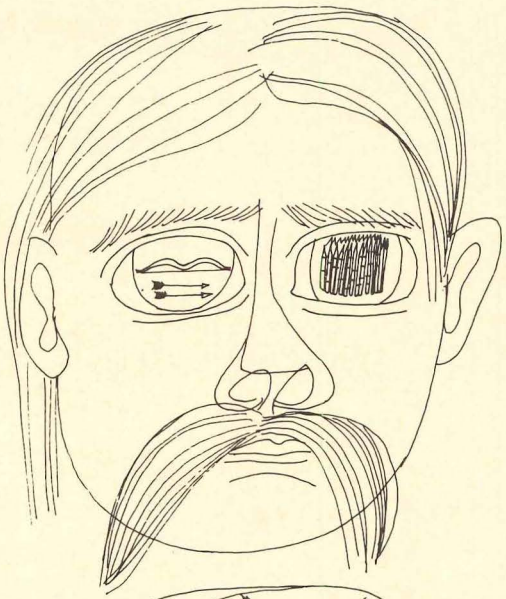
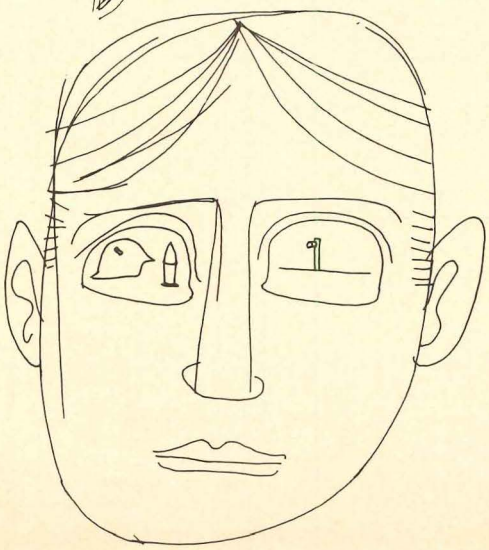
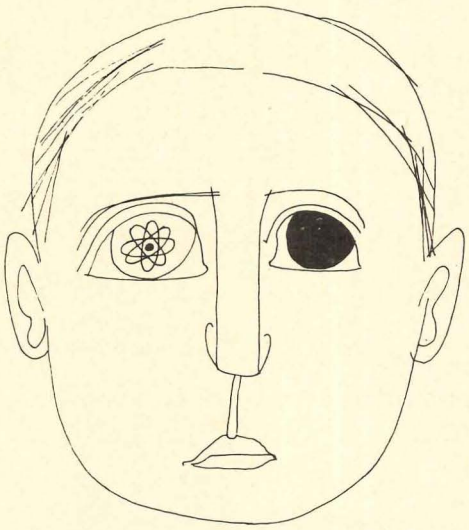






NEXT MONTH IN P/A

Turn on

Four architects who have taken the controversial drug LSD report on its effects and possible uses as a design tool, and discuss the desirability of all architects having psychedelic experiences under controlled conditions.

Turn around

The St. Paul Jewish Community Center by Leonard Parker uses a simple in- and out-turning radial corner to create an interesting flow of spaces and forms.

Turn for the better

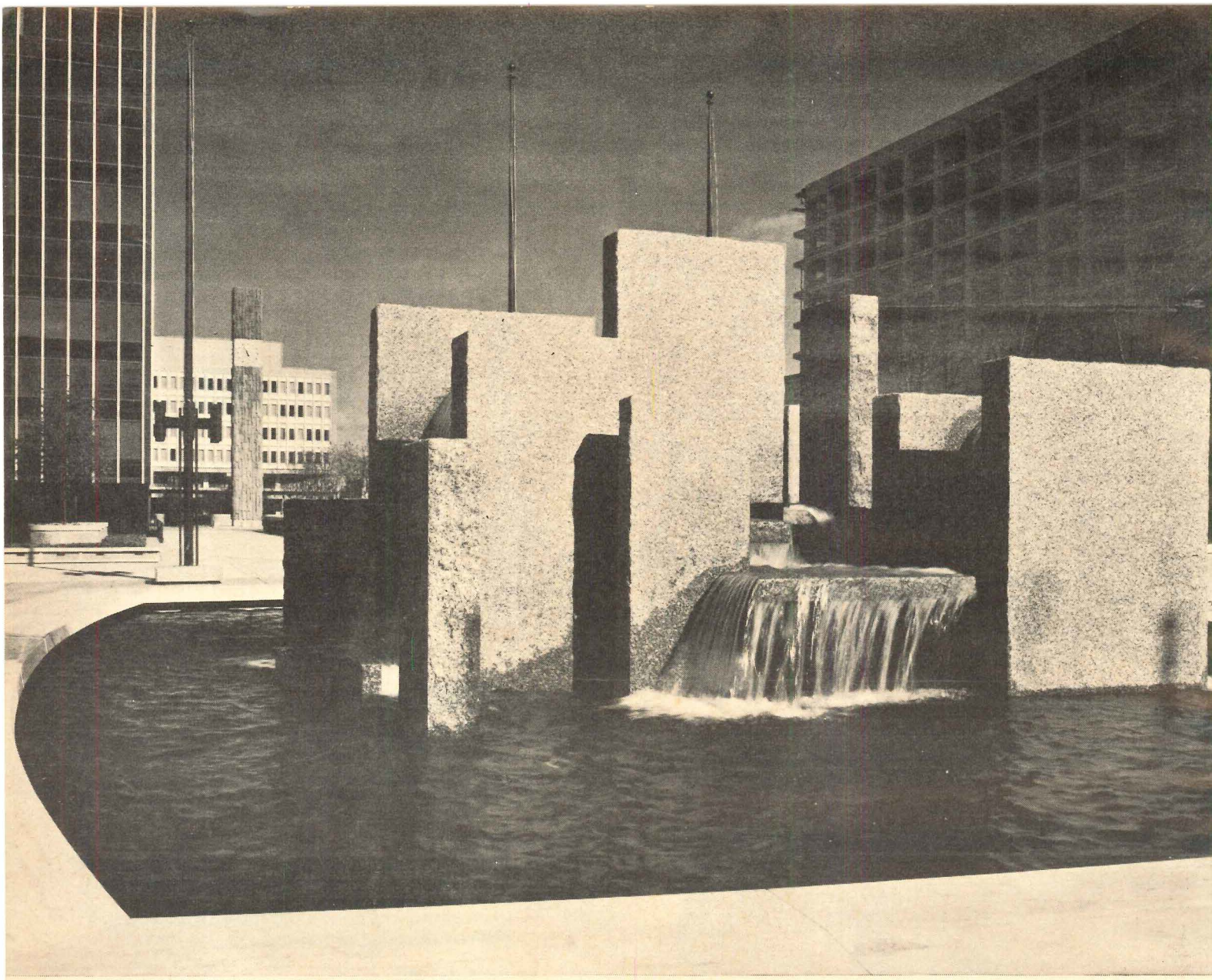
Mental hospitals, too often drab and forbidding institutions, are the subject of compassionate research in the new Woodview Section of the Topeka State Hospital, and of considerate planning and design by Wittenburg, Delony & Davidson, Inc., at the Orval E. Faubus Intensive Treatment and Administrative Center, Little Rock.

Turn about

Something is finally being done about recapturing the waterfront in New York. Two prominent firms -- Harrison & Abramovitz, and Whittlesey, Conklin & Rossant -- have come up with separate proposals for land-fill developments in the Hudson River. They are both assessed with a view to what this kind of planning might mean not only for New York, but also for other water-bounded cities.

Turn in

The August P/A, with these brain-teasing articles and a number of others, will be yours, followed monthly by eleven more lively issues. Just tear out the "Subscriptions" card on the Readers' Service Card (see Contents Page), fill it in, and turn it in to our Circulation Manager. We promise it will be a stimulating year.



FOUNTAIN, CONSTITUTION PLAZA, HARTFORD, CONN.

Landscape Architect: Sasaki, Walker & Assoc., Inc. • Architect: Charles DuBose, FAIA, Hartford • General Contractor: F. H. McGraw & Co. • Leadwork: John F. Abernethy Co.

Lining Pools without Lead Just doesn't hold Water

Lead lined pools and planters permit greater architectural expression. You can place pools almost anyplace . . . in a lobby or apartment or directly over rentable space. The Fountain in Constitution Plaza in Hartford is another dramatic example of the imaginative use of a pool in modern architecture. Here, 10 tons of six-pound (3/32″ thick) sheet lead protect a public garage located directly under the pool from leakage.

Sheet lead is durable and corrosion resistant. Completely impervious, it is unmatched for its water proofing qualities. It conforms readily to any shape reducing installation costs. And maintenance costs for long-lasting lead are practically nil.

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Look Ahead with Lead

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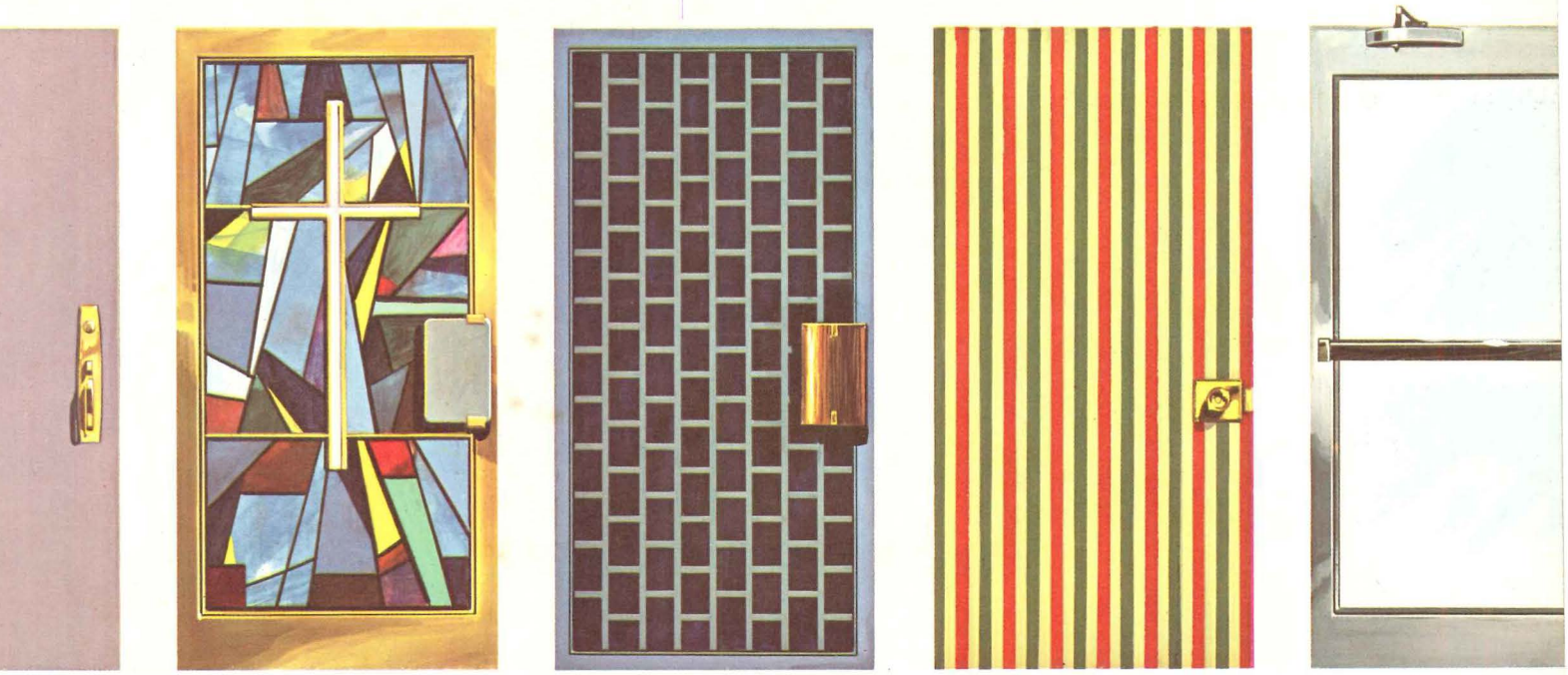

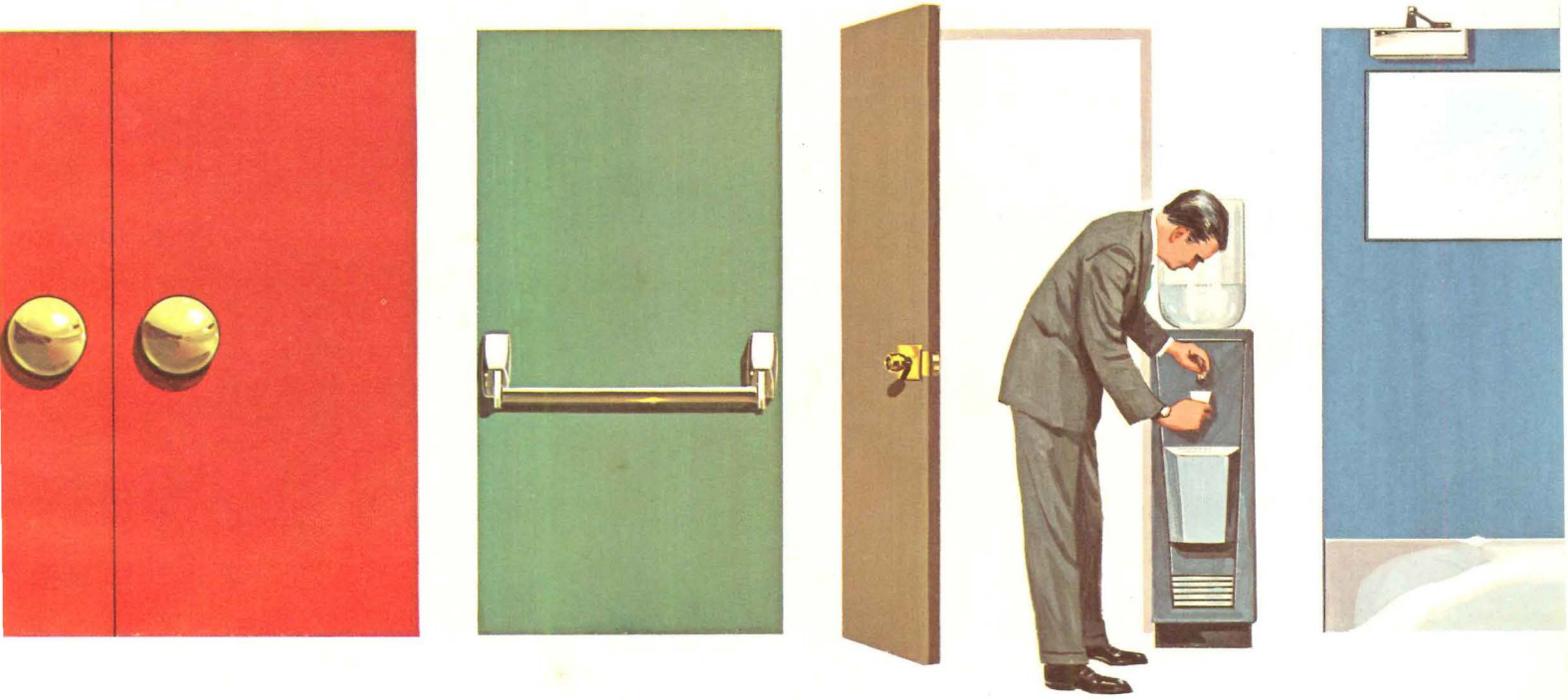

Americans will never lose their love for the Great Indoors

. . . refresh their spirits with Corbin Hardware!

Hardware, particularly door hardware, is among the chief articles viewed and handled countless times in the day-to-day life of the average American. That is precisely why it is important to surround our Indoorsmen with door hardware that provides both beauty and security. Make it Corbin hardware . . . a name they know and trust.

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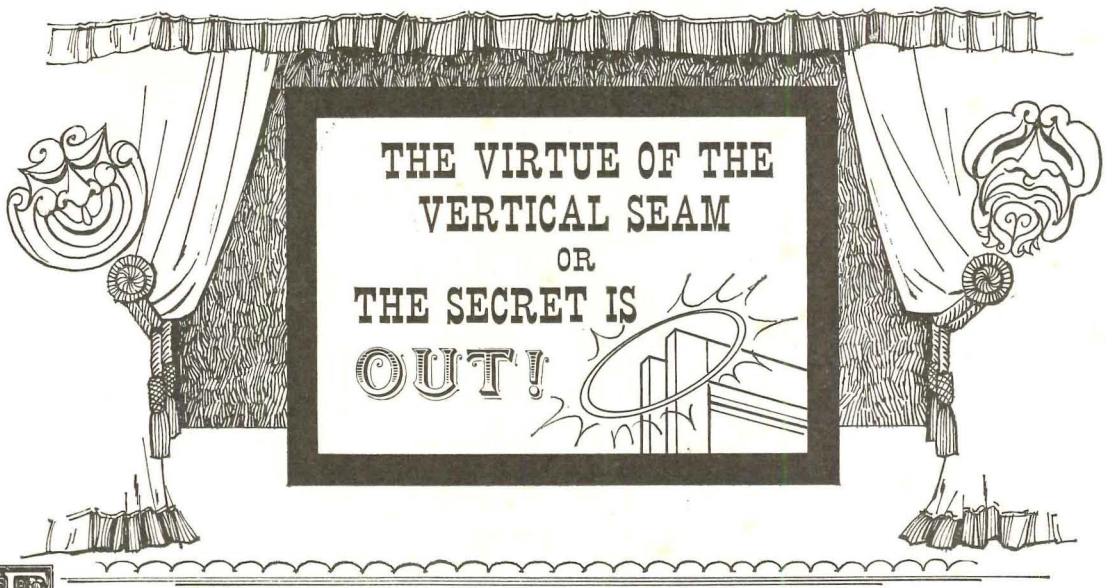


The Man From Manufacturing is an expert on Steel Doors and Frames.

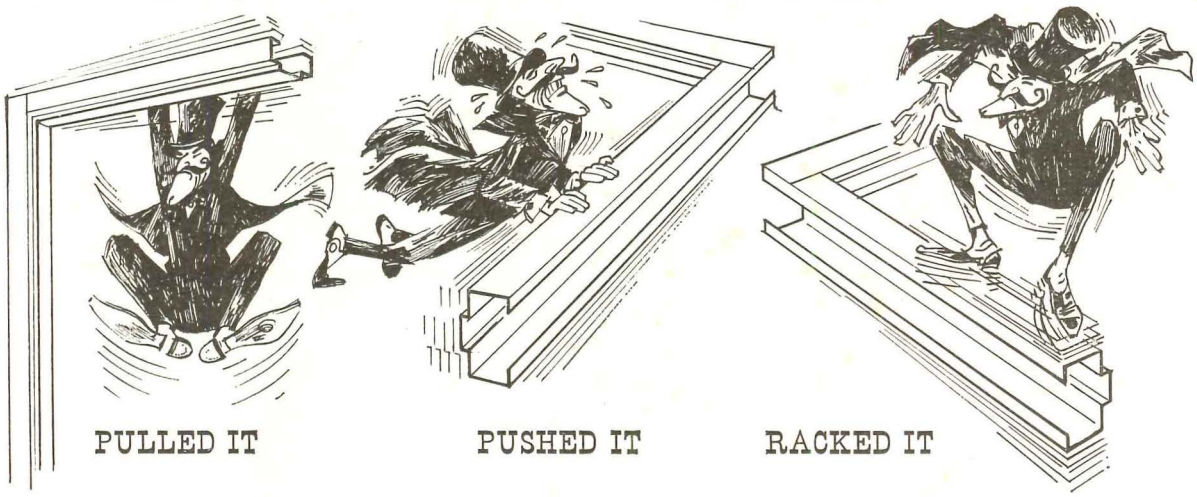
He promotes and sells a *vertical seam* Frame!

Why?

The answer is simple. It is more modern. It is more attractive.

Most of all—it is stronger!

Tests prove it, beyond a doubt. A leading independent testing laboratory tested the Republic Universal Frame against two competitive Frames with mitered corners.

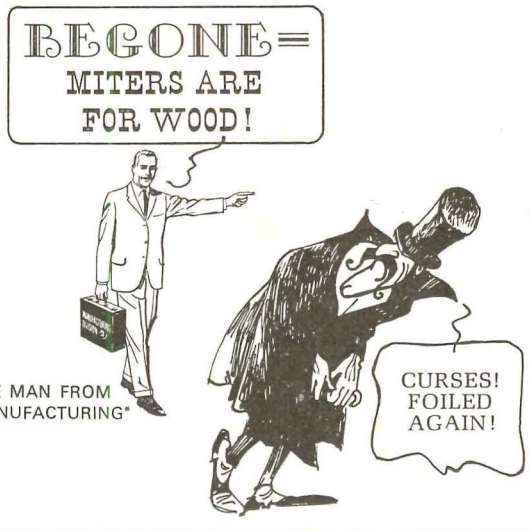


RESULTS?

In loads up to 450 pounds on a single corner, the Republic Universal Frame was superior in *each* and *every* case! (And what door weighs even 100 pounds?)

Republic puts added frame strength where it counts—at the corner! The vertical seam Frame is the only one that can have such extra strength.

Next time, choose Republic Universal Frame—the one with the vertical seam.



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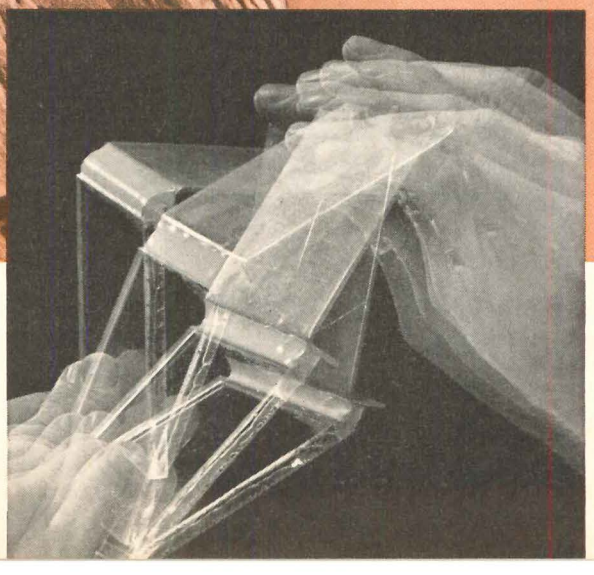

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For nearest distributor, see Sweet's Architectural File.

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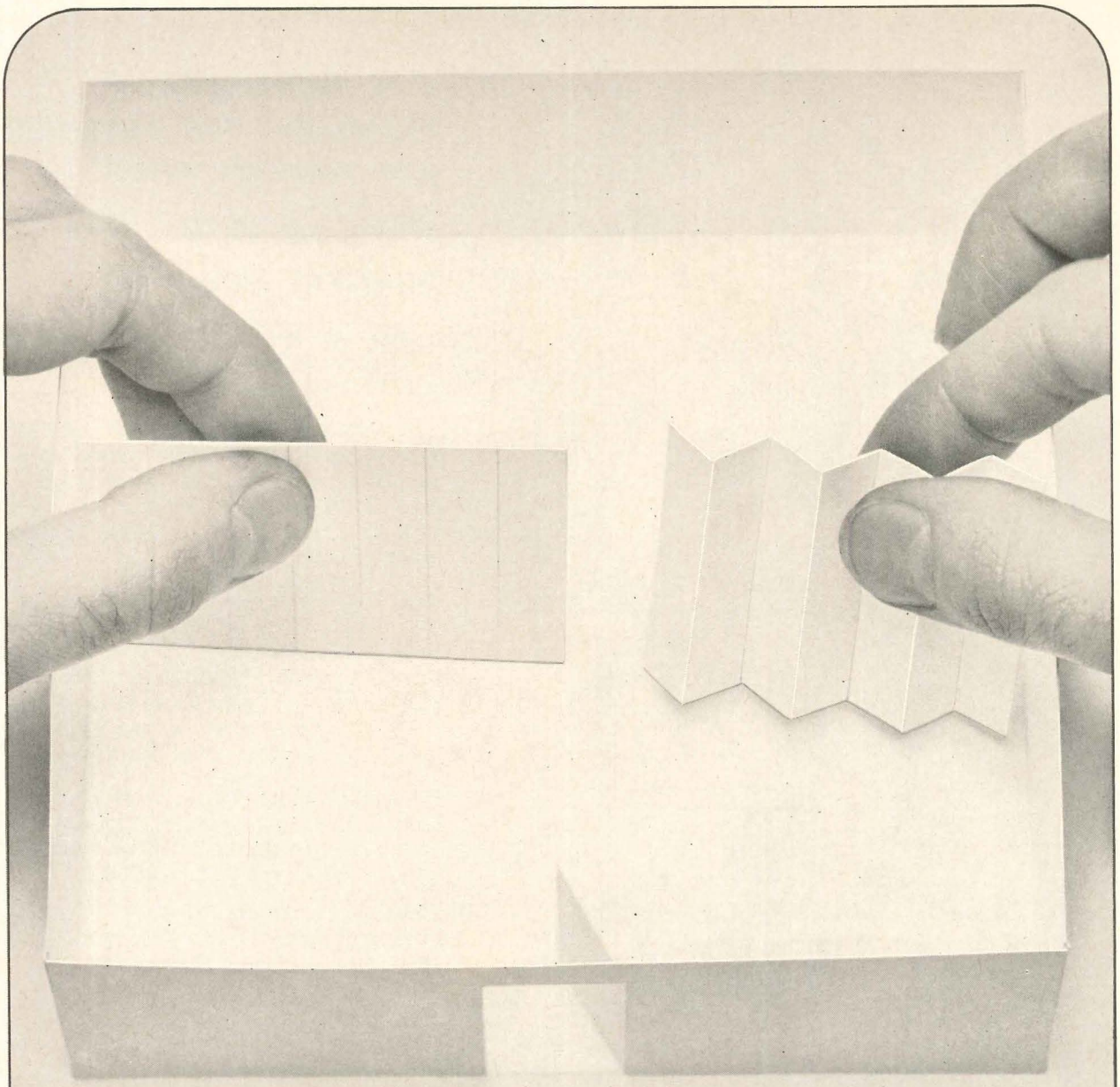

How to divide a large room in half (or quarters or eighths)

Grant 1500/1600 door hardware

Grant Folding Door Hardware enables you to divide large openings or small. It operates quietly, easily, quickly. No binding or chattering to dismay the user, no headroom excess to destroy the installation's clean lines.

If you must consider the division or sub-division of areas, you'll find Grant Folding Door Hardware the most effective, efficient means to that end.
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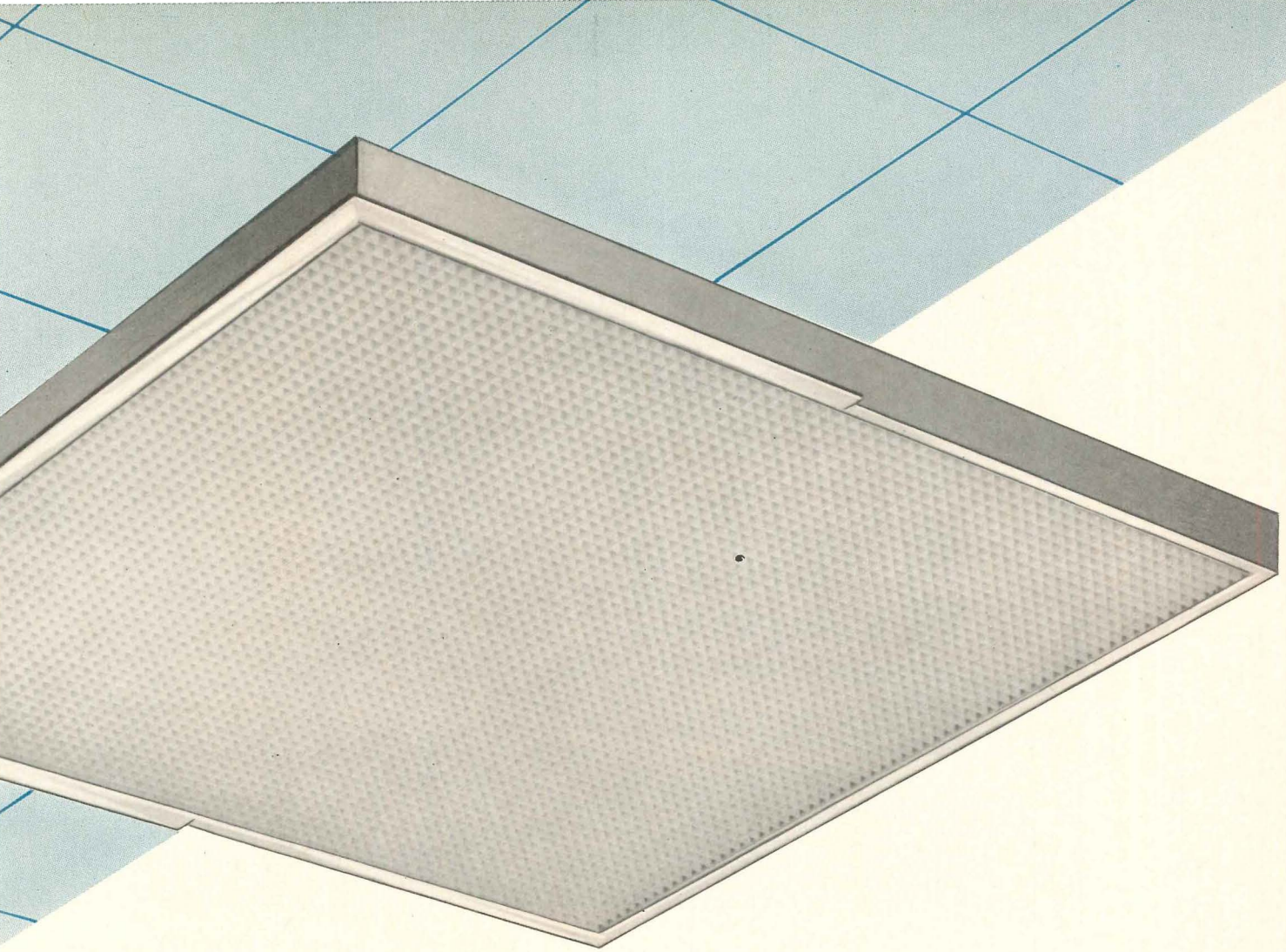

3 x 3 louvers

FOR RECESSED OR SURFACE MODULES

Now available, a louver which supplies a 3'x 3' panel for presently popular 3'x 3' fixtures. Available as a self-hinging frameless louver; framed in a metal door frame or just a lay in panel, the 3' x 3' provides the perfect aesthetic tool for many lighting design problems.

Translucent plastic egg-crate louvers provide attractive, high efficiency light diffusion. 45° shielding is attained by ½ x ½ x ½'' cells. As over 70% of the panel is open, the light comes through to the work surface instead of "brightening up" the panel. Destaticized louvers repel dust, practically eliminating maintenance problems. Open cubes allow free air circulation, increasing lamp life and efficiency. Louvers are ideal for luminous ceilings under sprinkler systems. Sizes from 1x4 ft. up to 2½x5 ft.

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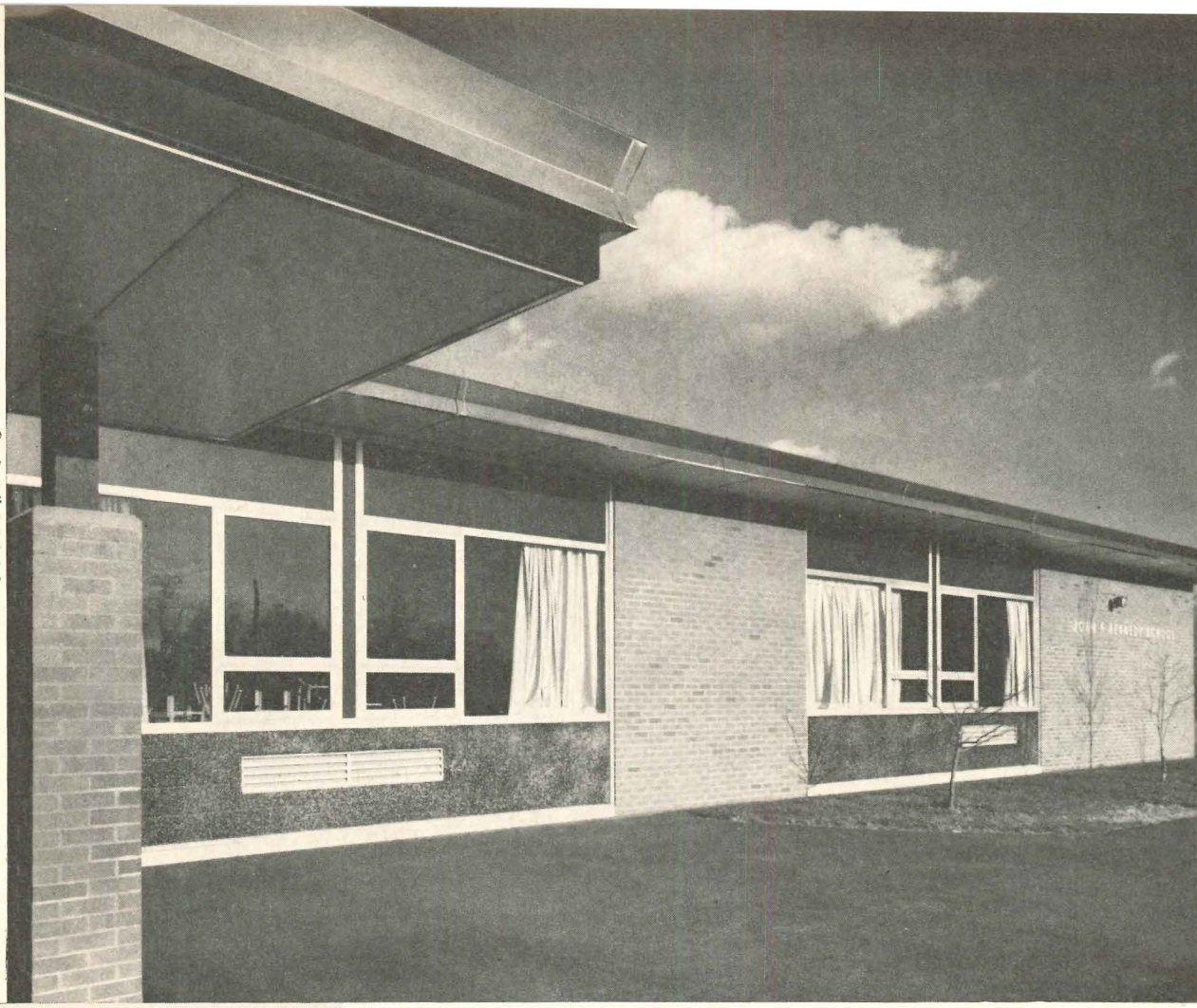
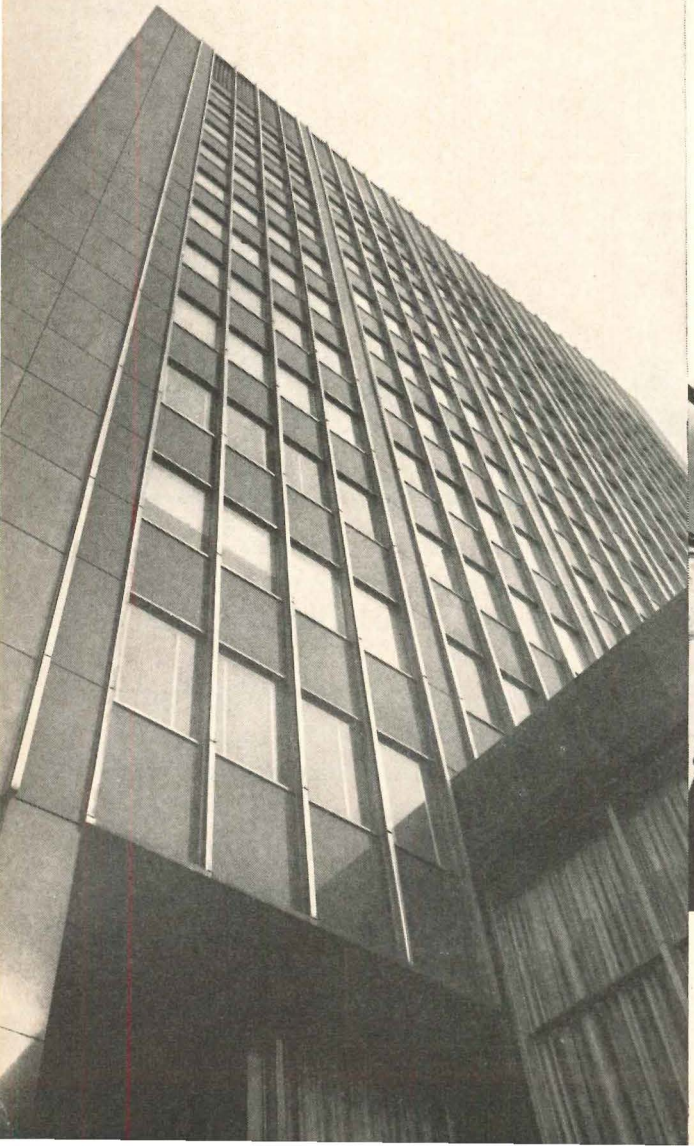


10,000 pounds of stainless were used for the facia and gravel stop of the John F. Kennedy School in Windsor, Conn. Architect: Louis Drakos & Associates, Hartford, Conn. General Contractor: A. F. Peaslee, Inc., Hartford, Conn. Fabricator: Fishman & Sons, Inc., Windsor, Conn.



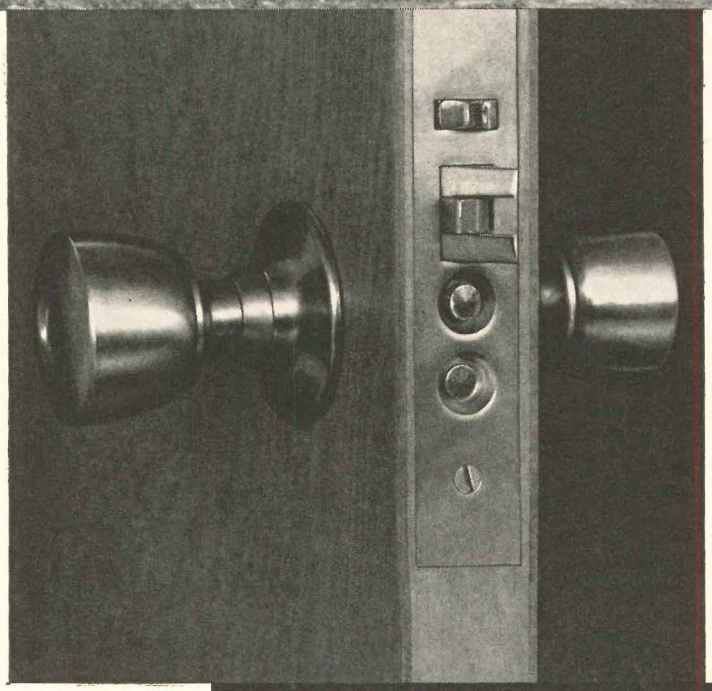
Steel

When nickel stainless steel goes to school

This staircase at the Brookings Institute Center for Advanced Studies, Washington, D.C., incorporates handrails and tubing made completely of stainless. Architects: Faulkner, Kingsbury and Stenhouse, Washington, D.C. Fabricator: Criss Brothers, Inc., Bladensburg, Md.

This 14-story student building on the campus of Stevens Institute of Technology, Hoboken, New Jersey, is planned for a life of 100 years. Exterior mullions, roof coping, louvers, flashing, lobby door frames, convector covers, railings and elevator doors are stainless. Architect: John J. McNamara, New York, N. Y. General Contractor: Walter Kidde Constructors, Inc., New York, N. Y. Metal Fabricator: Moynahan Bronze Company, Flat Rock, Mich.

Curtain walls and windows are stainless at the Elmira Free Academy in Elmira, New York. Architects: Fudge and Underhill, Elmira, N. Y. Fabricator: United Stainless Window Div. of Seagrave Corp., Woodside, L. I., N. Y.



At the Colorado State College Special Education Facility in Greeley, Colorado, stainless was used throughout the building for interior and exterior door hardware. Architect: Robert F. Linstedt, Denver, Colo. Fabricator: P. & F. Corbin, Division of Emhart Corp., New Britain, Conn.

you'll win all the honors.

Honors seem to come naturally to architects who design with stainless when they work on schools.

Kindergarten or postgrad, elementary or advanced study—school buildings have to be designed not only for beauty, but for long life, ruggedness and low maintenance. That's where stainless is in a class by itself. The toughest architectural metal available, it withstands the roughest use and abuse; in fact, it's just about student-proof.

Remarkably enough, there's no compromise made in appearance to achieve maximum strength in even the lightest, most economic gauges. Stainless can be easily fabricated to your design specifications. It'll blend perfectly with surrounding colors and textures. It won't corrode or weather—even in fog, smog, broiling heat or biting blizzards. The easiest and lowest cost of all architectural metals to maintain, stainless needs only an occasional washing with ordinary detergent and water.

Study the advantages of nickel stainless steel for your next design—including curtain walls, entrances, windows, railings, hardware, flashings and other available products. And if your clients haven't graduated to stainless yet, let us supply you with more convincing information. For your copy of the "Stainless Steel Architectural Fact Sheet" and for our series of "Suggested Guide Specifications for Stainless Steel Products," write: The International Nickel Company, Inc., 67 Wall Street, New York, N.Y. 10005.

INTERNATIONAL NICKEL

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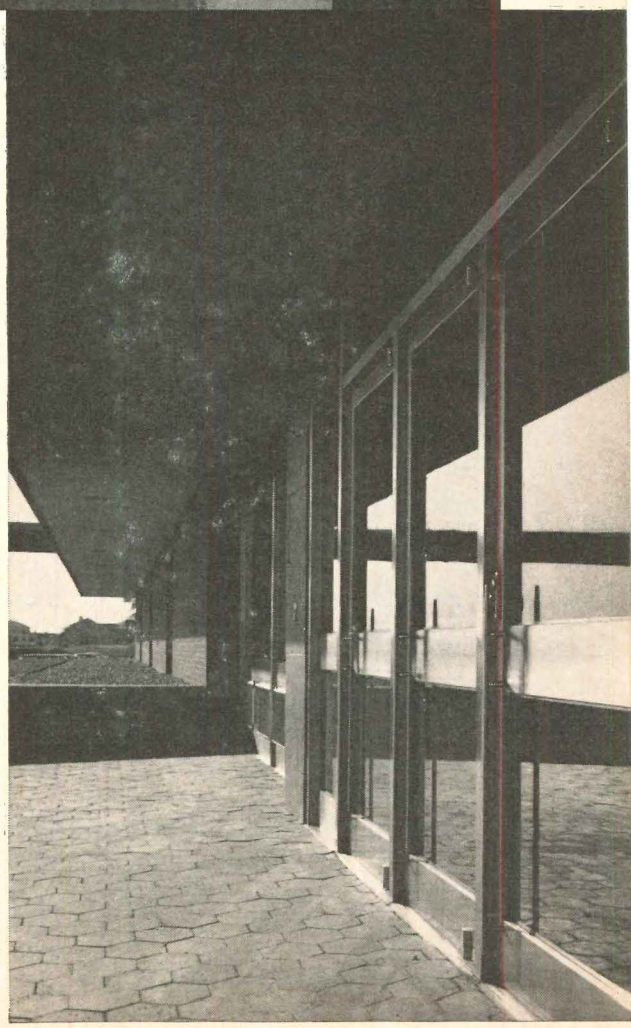

Heavy traffic doesn't faze these stainless balanced doors at the New York Maritime College Health and Education Building, Port Schuyler, Bronx, N. Y. Sidelites are also stainless. Architect: Ballard, Todd Associates, New York, N. Y. Fabricator: Schacht Associates, Bronx, N. Y.

Architects: Richard C. Reilly, Fort Lauderdale, Florida
Engineers: Saul Neufeld Associates, North Miami, Florida
General Contractor: Sir Robert McAlpine & Sons (Bahamas) Ltd.
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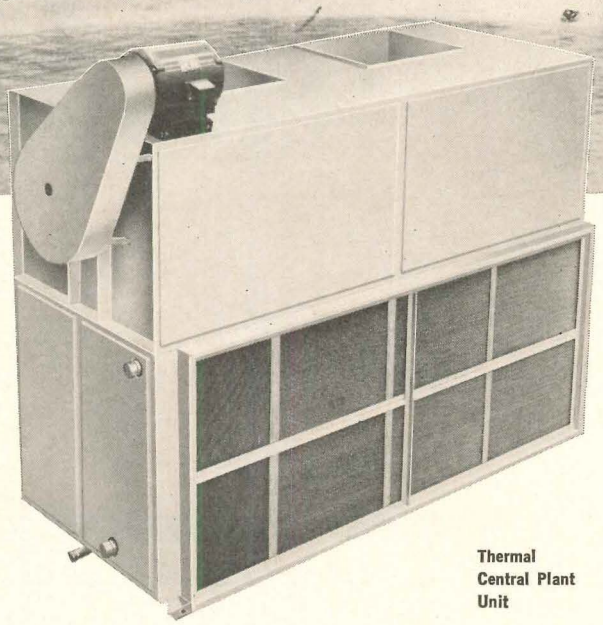
Ocean Breezes Cooled By Thermal

AT THE SHERATON-BRITISH COLONIAL NASSAU



Thermal Central Plant Unit

Twenty-five big Thermal central station air conditioners assure the ideal in comfort for guests in the new addition to the Sheraton-British Colonial Hotel, Nassau, Bahamas. The new addition, with its 175 elegant rooms, Wharf Restaurant and 22 import boutiques, is part of this largest multi-million dollar resort development in Nassau.

The recognized need for dependable, quality equipment with the flexibility to meet specialized requirements as to climate, or space has greatly increased the demand for Thermal equipment throughout the free world. Perhaps Thermal could best fit your needs, too.

The Thermal line includes multizone conditioners (remote and self-contained) central plant conditioners, spray coil units, heating and cooling coils, air-cooled condensers, air-cooled condensing units, heating and ventilating units, plus many other items. Complete information including technical data and the name of the Thermal Representative nearest you will be furnished at your request.

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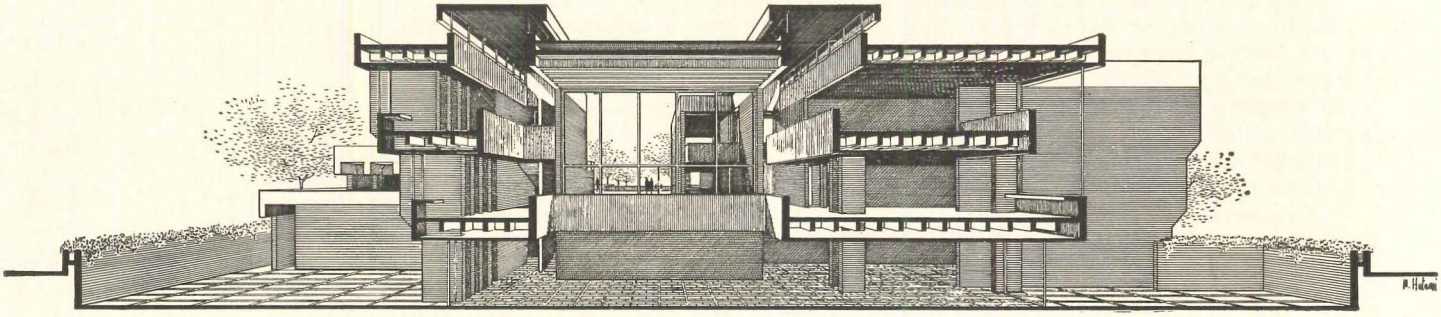
Not too long ago most architects would probably have voted that dubious honor to fire extinguishers. For example—less than 20 years ago the little beauty below was not only the most effective extinguisher available, but just about the most attractive. Today, everything has changed. At Ansul, the name of the game is design! Design for better performance and better appearance. The Ansul dry chemical unit at the right not only looks good but is, by actual UL test, 9 times as effective as the best comparable extinguisher of 20 years ago. Another Ansul unit, our new ENSIGN pressurized fiber glass water extinguisher, is available in 48 different decorator colors to meet the esthetic requirements of today's architects. Ansul, the world's leading manufacturer of fire protection equipment, has created a broad line of extinguishers intended to visually enhance your building. We offer a complete consulting service to architects . . . so when fire protection problems come up, call on Ansul.

THE ANSUL COMPANY, MARINETTE, WISCONSIN

Zonolite prototype building #9: A college library



Marvin Hatami designs a college library.

Utilizing Zonolite® Masonry Fill Insulation in walls reduces initial equipment costs, saves $700 per year on fuel, substantially raises indoor wall surface temperature.

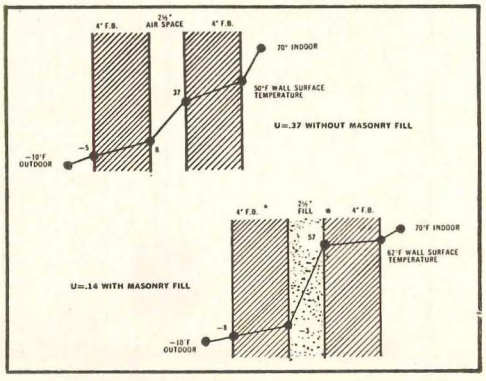
What would seem to be an added cost for insulation, in reality, is a highly profitable investment for your clients.

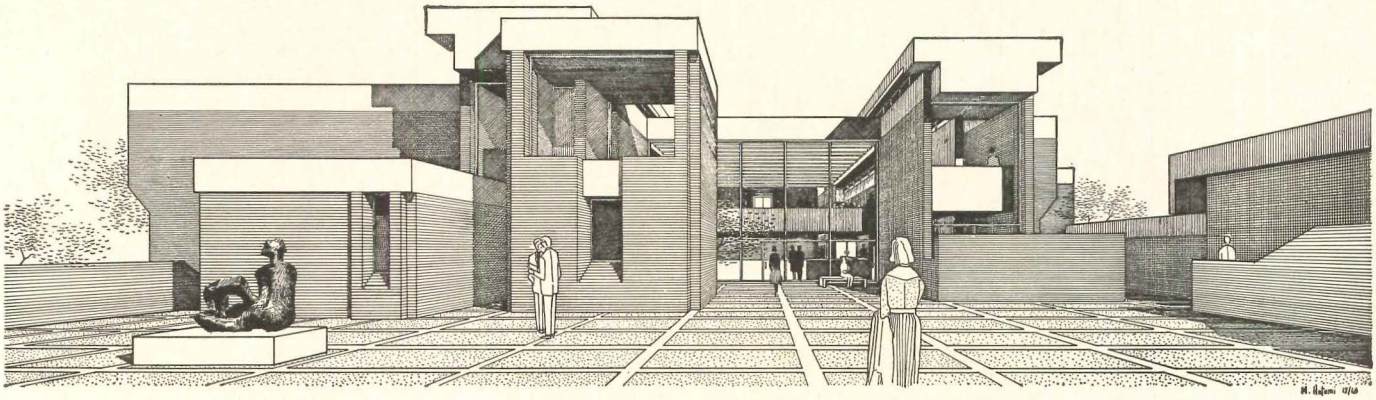
Consider this library designed by Marvin Hatami and engineered by Cator Ruma of Denver, Colorado.

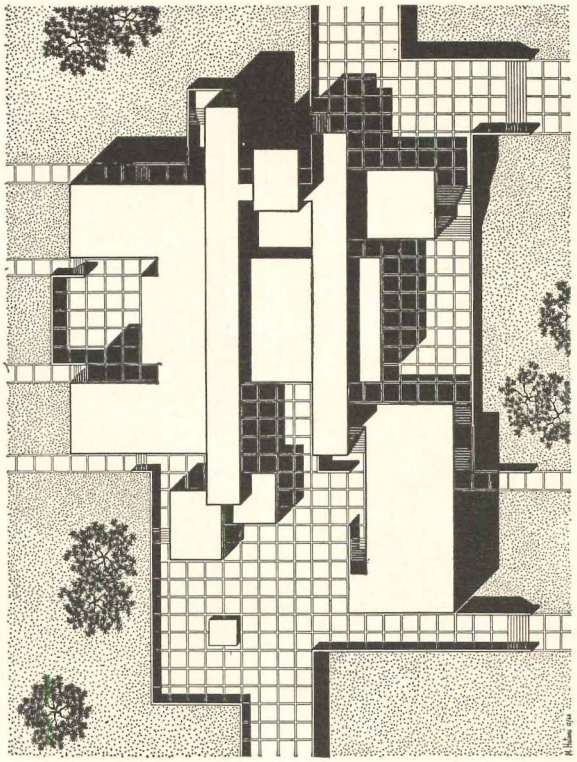
Its reinforced brick cavity walls feature Zonolite Masonry Fill Insulation. Installed cost? 10¢ per sq. ft. or $3245 total. As part of a 20-yr., 6% mortgage, it figures out to $279 annually.

For this investment, the client saves $700 per year on fuel. That's a direct 250% return on his yearly investment in Zonolite Masonry Fill Insulation.

There are indirect savings, too. (1) Smaller, less costly heating equipment can be used. (2) Indoor wall surface temperatures are raised from 50° to 62° F. This reduces body radiant heat exchange, minimizes wall surface downdrafts. (3) The interior surfaces of the walls can remain unfinished. And (4) the building is quieter because of Zonolite Masonry Fill Insulation's excellent sound absorption characteristics.







DESIGN CONDITIONS			Winter Heat Loss in BTU/Hr. Assuming 70°F Indoors —10°F Outdoors		Summer Heat Gain in BTU/Hr. Assuming 95°F, DB 64°F, WB Outdoors 78°F, DB 65°F, WB Indoors	
	Without Masonry Fill	**With Masonry Fill**	Without Masonry Fill	**With Masonry Fill**	Without Masonry Fill	**With Masonry Fill**
Walls	4″ Face Brick 2½″ Air Space 4″ Face Brick	4″ Face Brick 2½″ Zonolite Fill 4″ Face Brick	962,000	**364,000**	201,000	**76,000**
Roof	Roofing, 3½″ Concrete		225,000	**225,000**	107,000	**107,000**
Floor	4″ Concrete on Grade		56,000	**56,000**	—	—
Glass: Solar & Transmission	¼″ Heat Absorbing Plate		730,000	**730,000**	443,000	**443,000**
Ventilation	15,000 DFM		1,080,000	**1,080,000**	229,000	**229,000**
Lights	175 Kilowatt		—	—	596,000	**596,000**
People	500		—	—	200,000	**200,000**
Totals			3,053,000	**2,455,000**	1,776,000	**1,651,000**
% Savings with Masonry Fill			$\frac{3,053,000-2,455,000}{3,053,000} \times 100 = \mathbf{19.6\%}$		$\frac{1,776,000-1,651,000}{1,776,000} \times 100 = \mathbf{7\%}$	

Additional facts of significant interest are available in our Bulletin MF-113. For your copy, please write Dept. A, Zonolite, 135 South LaSalle Street, Chicago, Illinois 60603

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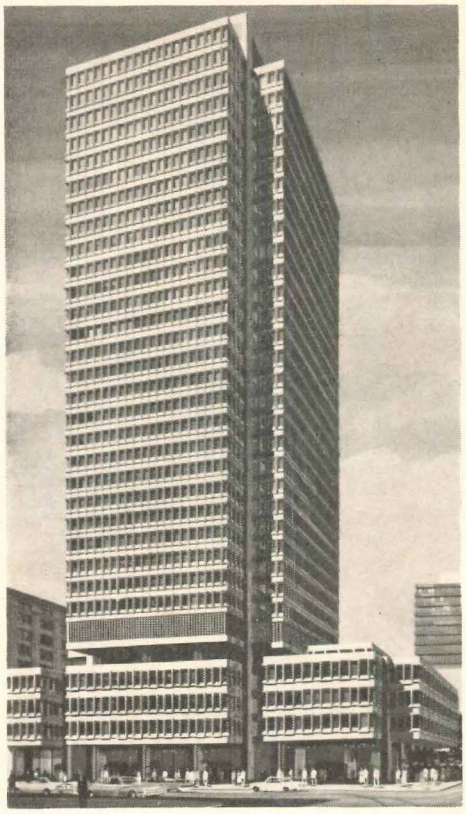

How to rent the 33 floors of the State Street Bank Building the easy way:

Put Fiberglas* Beta* draperies in every window.

Pearl Street Associates, architects and engineers of the new State Street Bank Building in Boston, spent considerable time investigating window treatments for this building. As Mr. F. A. Stahl explained: "A Building Standard drapery installation was thought to be the best solution, not only because the window treatment would be uniform from the exterior, but it would be a good renting point for prospective tenants as well. Attractive appearance is only one reason Fiberglas Beta was specified . . . easy and low cost maintenance and flexibility in installation are just as important."

This happens every day. Modern architects, like Pearl Street Associates, want a fabric that's both beautiful and practical. This is Fiberglas Beta. They want a fabric that's extra-sturdy and economical, too. This is Fiberglas Beta.

Sturdy: Fiberglas is flame-resistant, unaffected by humidity, resistant to sun. Won't stretch or shrink.

Economical: Fiberglas is washed, not dry cleaned, never needs pressing, or alterations due to change in size. Fiberglas also helps reduce heating and air-conditioning costs because it insulates—year round.

No matter what size building you have, Fiberglas Beta drapery fabrics make renting it easier. For more information and Fiberglas fabric resources write: Owens-Corning Fiberglas Corp., Decorative and Home Furnishings Div., 717 Fifth Ave., N.Y.C. 10022.

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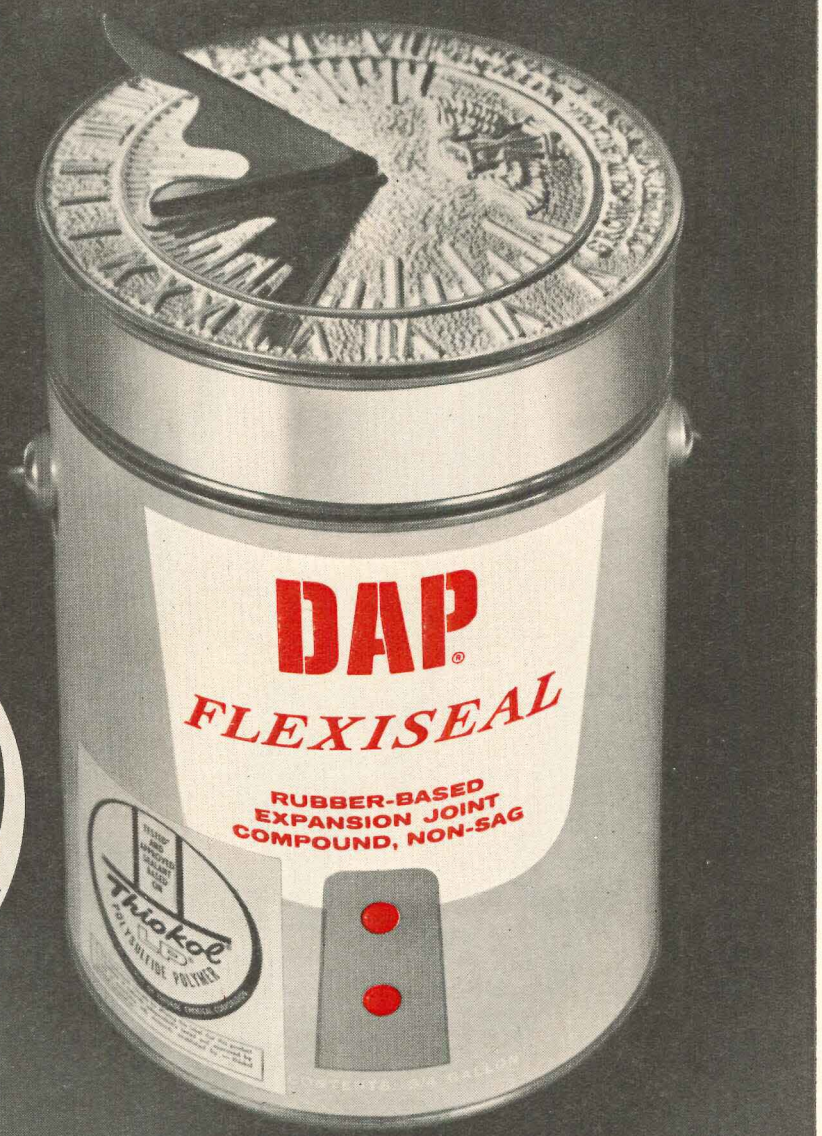
Fiberglas Beta fabric designed, fabricated and installed by Rosco Products, Inc., Boston, Mass.

DAP Flexiseal®... The polysulfide polymer sealant proved by time and the Thiokol* seal of security



TESTED* AND APPROVED SEALANT BASED ON Thiokol® LP® POLYSULFIDE POLYMER MANUFACTURED BY LICENSEE OF THIOKOL CHEMICAL CORPORATION

* Trademark of Thiokol Chemical Corporation

DAP is proud to display the Thiokol Seal of Security as tangible recognition of DAP Flexiseal's superior performance. The seal is added assurance that Flexiseal meets the most exacting requirements for extreme conditions of expansion and contraction, wide temperature ranges and severe exposure.

Flexiseal gives a positive, flexible bond year after punishing year. Field installations of polysulfide and laboratory tests indicate that Flexiseal installed today will still be delivering watertight, airtight protection years and years from now . . . far beyond the life of most other types of sealants. The reason: Flexiseal's balanced modulus. Adhesion is always greater than cohesion.

Specify Flexiseal for critical installations like these: expansion joints, curtain walls, swimming pools, porcelainized metal panels, tilt-up panels, skylights, channel or stop-glazed sash, and others. Thiokol's security seal standard is an extension of Fed. Spec. TT-S-227b.

With 10 strategically located plants throughout the nation, DAP assures you prompt on-site delivery anywhere, anytime. And remember: only the DAP Technical Service Department offers you laboratory assistance in specifying the architectural sealant that best meets your specific needs. Write us or check Sweet's File 3c/Da.

DAP® ARCHITECTURAL SEALANTS

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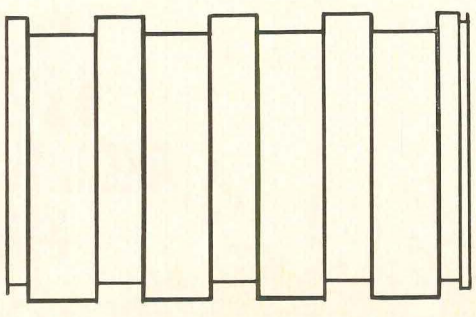
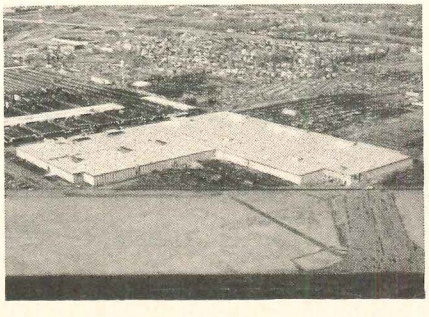
If you don't believe us...ask Pratt & Whitney Aircraft.





What is all this Wheeling hustle talk
Pratt & Whitney found out.

They found a need for a new bui
ing and were really squeezed for tim

Ground was broken in East Ha
ford, Connecticut, in July '65. Th
building completed in Januar
Months ahead of schedule.

How come?

Wheeling's 18-gauge Super-R
Roof Deck for one thing. 750,00
square feet of it (just like the inch
so shown here).

Hustle strikes again.

And Wheeling's hustle policy got all there two weeks early. That's ıstling!

What makes our roof deck super? 'e control the quality from ingot to stallation, have a real tough rib de- gn for maximum strength, and use ructural Grade "C" steel.

Our lengths are longer, too. Up to) feet.

In addition, Wheeling roof deck ſers greater variety.

Galvanized, painted with a primer coat (or unpainted), and non-galvanized primer-painted. For normal to extra-heavy weight loads.

And gauges from 16 to 22.

We even make a type which absorbs sound.

Like Pratt & Whitney Aircraft you'll find what you need for your job.

Other facts.

Wheeling roof deck is pre-engineered to your specifications.

Easier to handle on site—easier and quicker to install.

Provides work surface for other building trades and it's more durable.

Why are we telling you all this? Frankly, we want your business.

To try Wheeling roof deck for yourself, just give us the word:

"Hustle!"

Have you looked at Wheeling lately?

Wheeling
Wheeling Corrugating Company
Wheeling, West Virginia

CHARLES DU BOSE—ARCHITECT; JAMES S. MINGES & ASSOCIATES—ENGINEERS; GEORGE A. FULLER—GENERAL CONTRACTOR; NATIONAL STEEL FABRICATORS INC.—STRUCTURAL STEEL

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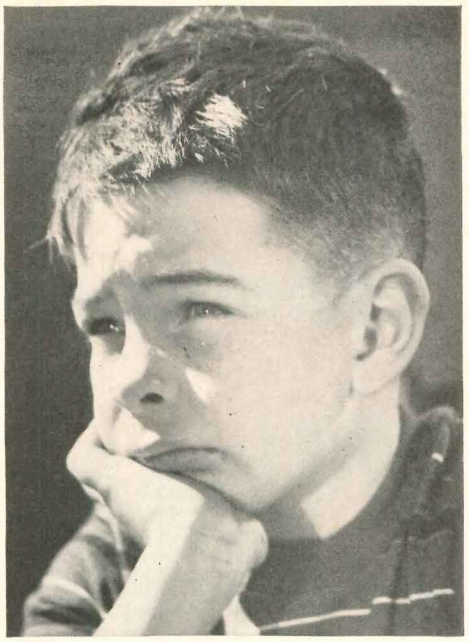

Multiply Billy Edwards by 48,800,000

to measure

the challenge of school construction

Figures on school enrollment are only part of the picture.* Education today is a living, changing thing. The idea is to equip Billy Edwards for *his own future*—not for his parents' past.

Doing this job calls for new concepts in school design—concepts made possible with *prestressed concrete.* Teaching space must be quickly changeable in size and shape. A gymnasium this evening may be four lecture halls tomorrow morning. The *most adaptable* schoolhouse is the *best schoolhouse* since education must meet changing needs and accommodate sophisticated teaching aids *with multi-purpose space.*

Now, school planners bring wide-open spaces *inside* as the long-span muscle of prestressed concrete invites them to forget about space-wasting columns. At the same time, this truly 20th century material points the way to impressive economies in speedily erected, fire-safe, quality schools.

See your local PCI member for details on the use of prestressed concrete in schools.

Send for your free copy of "PRESTRESSED CONCRETE—applications and advantages" and selected literature on prestressed concrete in schools.

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ARCHITECTURAL STRUCTURAL

* Public and private school enrollment, first twelve grades, 1965—1966 school year, is 48,800,000. Enrollment will increase 400,000 annually through 1975.—**U.S. Office of Education.**

UNIVERSITY OF CALIFORNIA
Davis, California
Architect:
Gardner A. Dailey, FAIA, & Associates
Engineer:
T. Y. Lin, Kulka, Yang & Associate

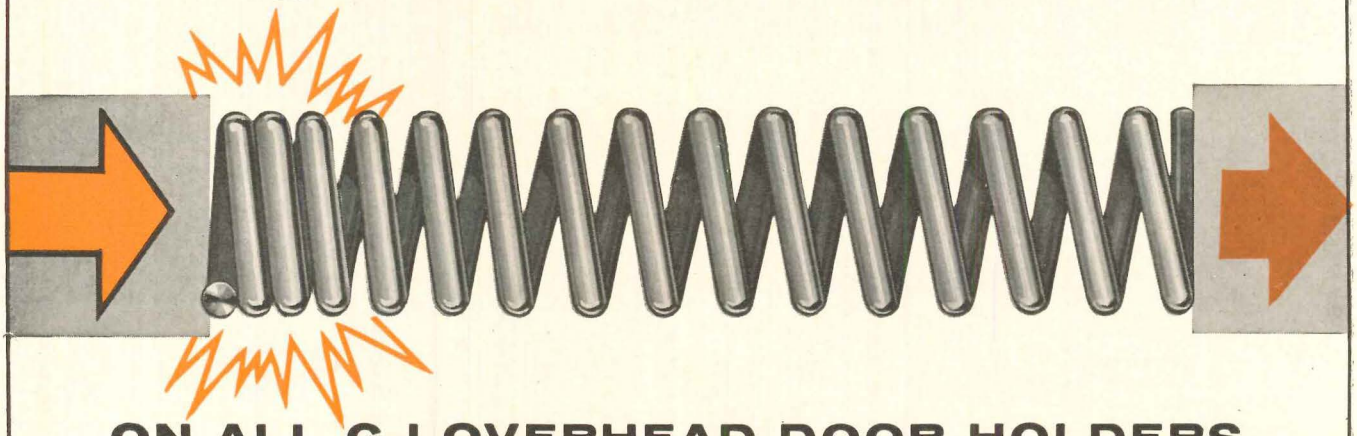
AMBASSADOR COLLEGE
Pasadena, California
Architect: Peter J. Holdstock
Engineer: Johnson & Nielsen

HENRICO HIGH SCHOOL
Richmond, Virginia
Architect:
J. Henley Walker, Jr. AIA

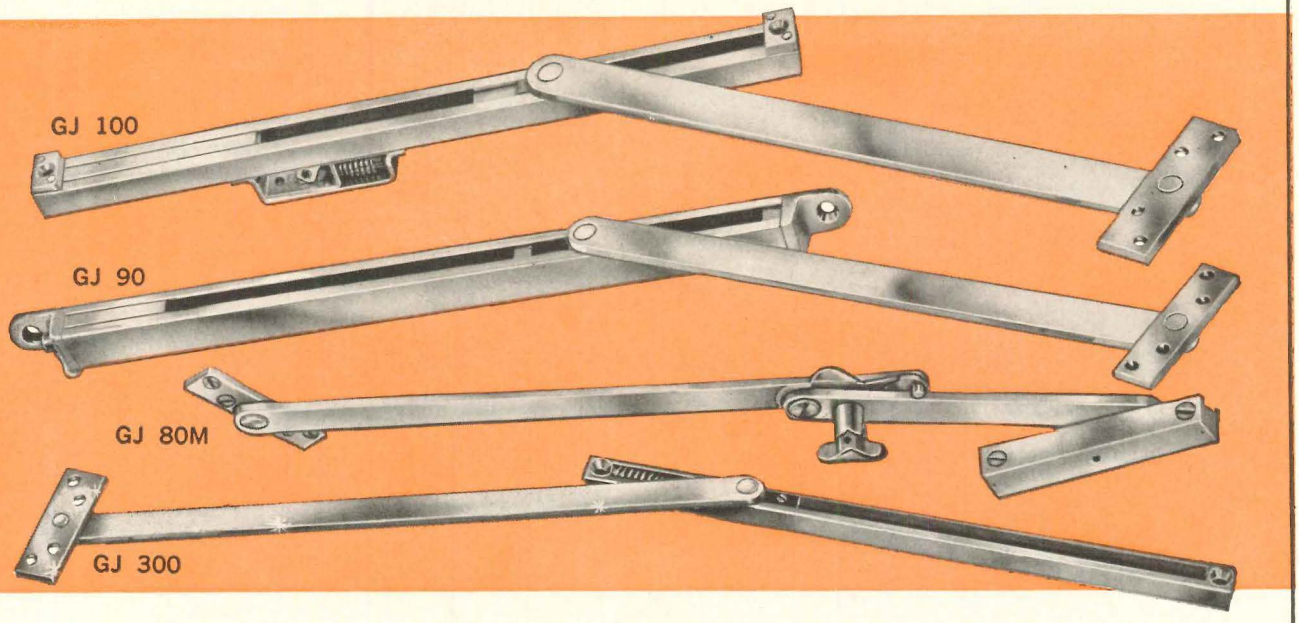
PARSONS RURAL ELEMENTARY SCHOOL
near Salina, Kansas
Architect & Engineer:
Anderson—Johnson AIA

ACADEMY OF THE HOLY ANGELS
Demarest, New Jersey
Architect & Engineer:
J. G. Phelan and Associates

It's the rugged GJ spring... designed to "SOAK UP" shock



ON ALL GJ OVERHEAD DOOR HOLDERS



That's why damage to doors, glass, walls, knobs, and people are avoided . . . for regardless of price you can always depend on the shock absorbing quality of GJ Overhead Door Holders.

There is a variety to choose from to meet varying budget requirements . . . all designed to control "wild doors", functioning as door stops, door holders and shock absorbing cushions.

to limit the door's swing and hold doors open, insist on GJ.

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Gulf Oil Corporation, TBA Warehouse, Atlanta, Ga. Architect: Ralph E. Pettet, A.I.A., Atlanta, Ga.
General Contractor: Sam N. Hodges, Jr., & Co., Atlanta, Ga.

SMITH WALLS in place...a single responsibility

We install our own product . . . that's why! From design through installation, Smith Walls are a single-responsibility project. That's the way we do business.

We design the walls to the architect's specifications . . . custom-fabricate the wall panels in our own plant . . . pack them carefully in Smith trucks for delivery to the building site . . . and erect them with our own specialist crews. And all this is done on a rigidly-controlled schedule set up by our coordinating expediter.

One supplier . . . one responsibility. And we're it. So we take extra care every step of the way to maintain our reputation for a quality product . . . properly installed . . . on schedule.

Smith Single Responsibility assures satisfied customers. The country's leading industrial firms, as listed in Fortune's 500, specify Smith Walls in place. Over and over again. For new construction *and* remodeling.

So specify the Single Responsibility . . . Smith Walls in place . . . on your next project. You'll find the details in Sweet's Catalog Files 3b/Sm and 8b/Sm. Or better yet, write!

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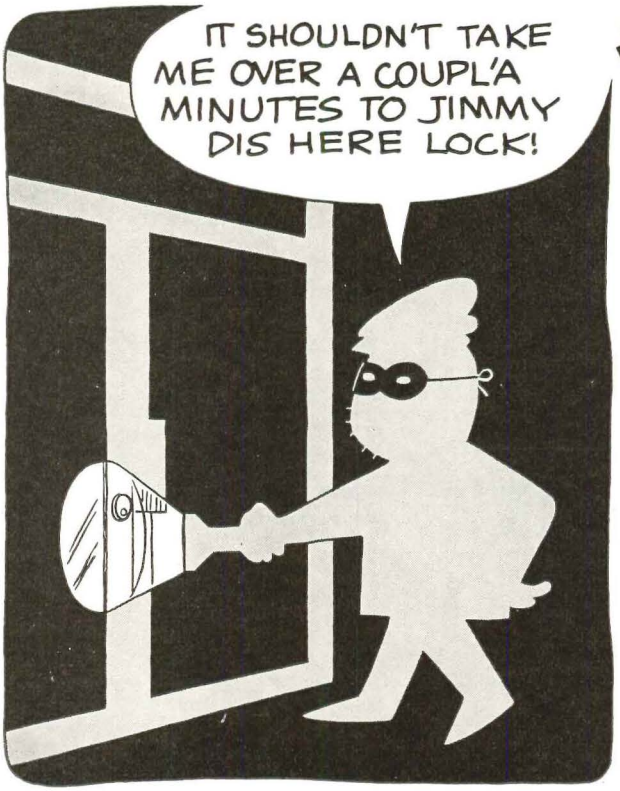
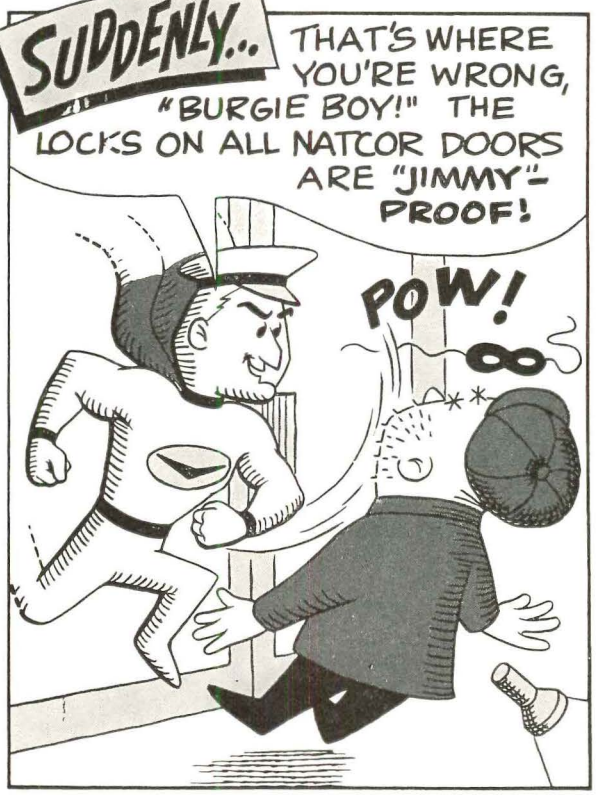
SMITH

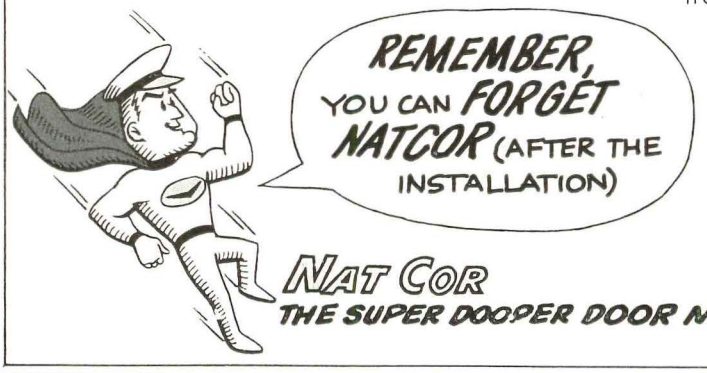
NATCOR DOORS

THE SUPER DOOPER





Foiled again — by Natcor quality . . . The Maximum Security Lock — 1⅜" throw, case hardened steel bolt and weatherstripped face plate for pairs of doors. And, Natcor's quality materials and engineering principles protect their doors and entrances from many other troublesome aggravations. For complete information on the full Natcor line, see our catalog in Sweets or write:



THE NATCOR COMPANY
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Natcor

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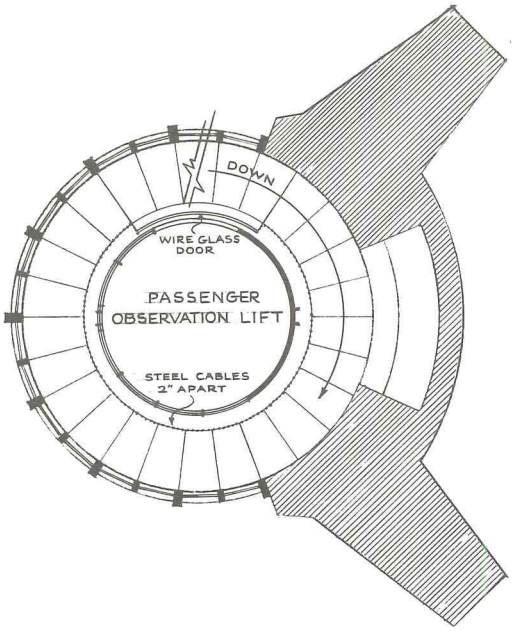
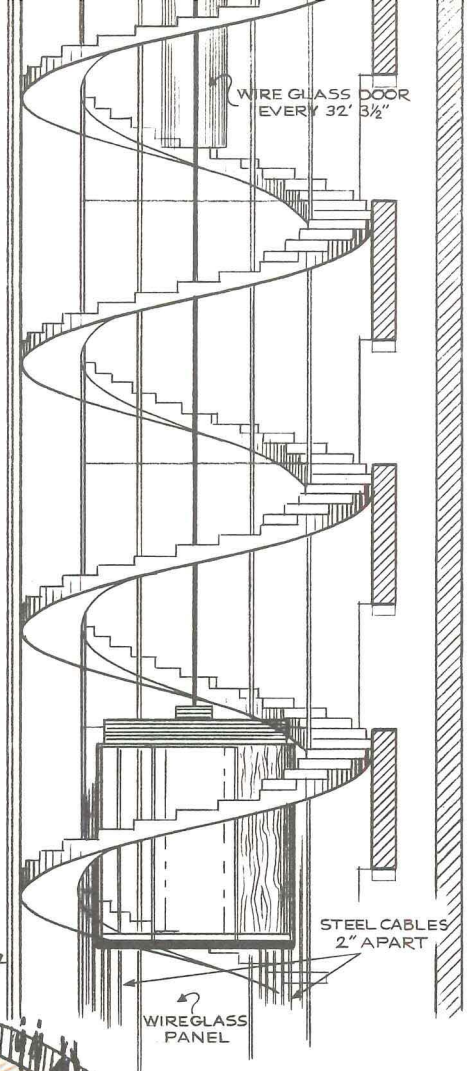
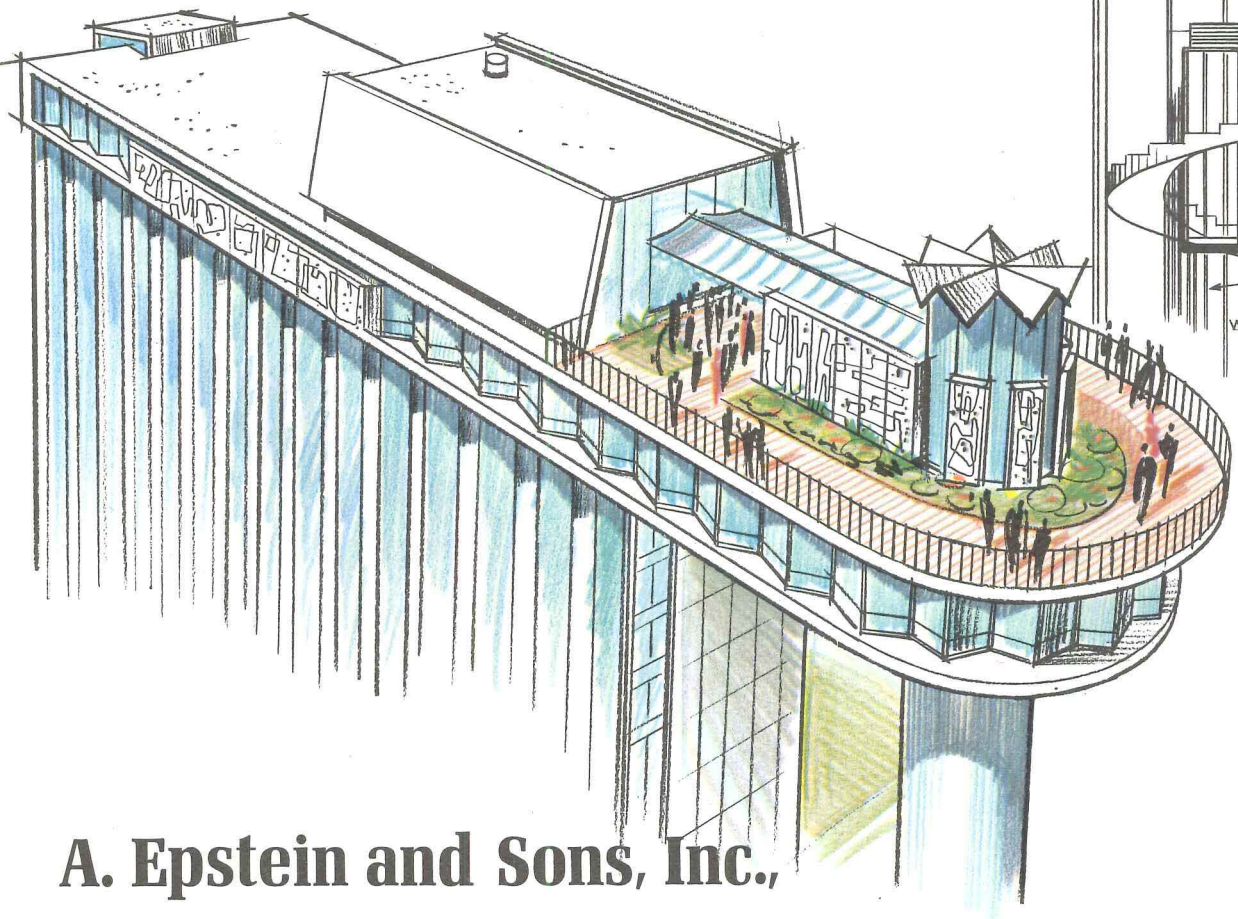


New design freedom in the Open World of L·O·F glass





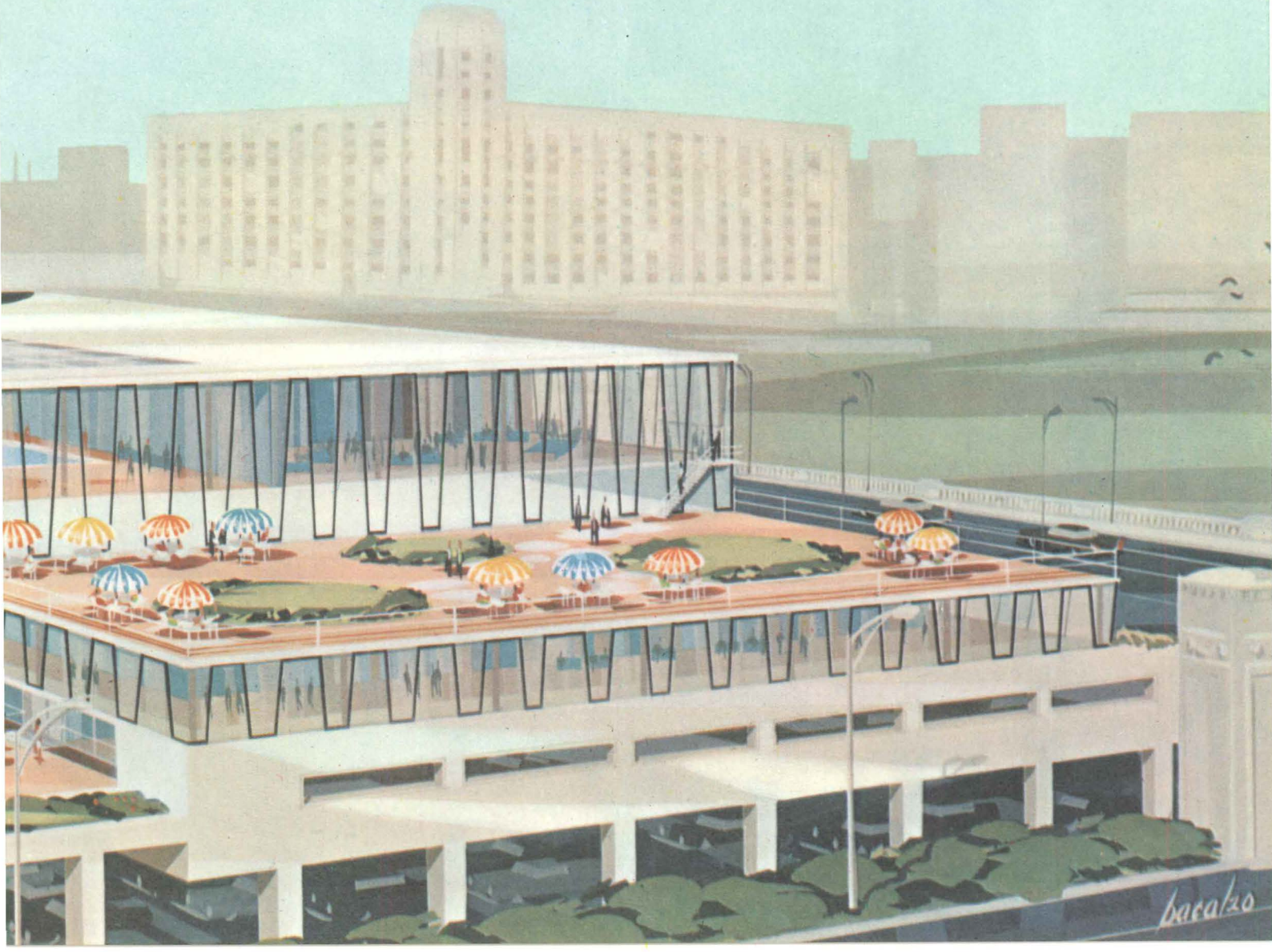
A. Epstein and Sons, Inc., design a spectacular Open World Inn for conventioners

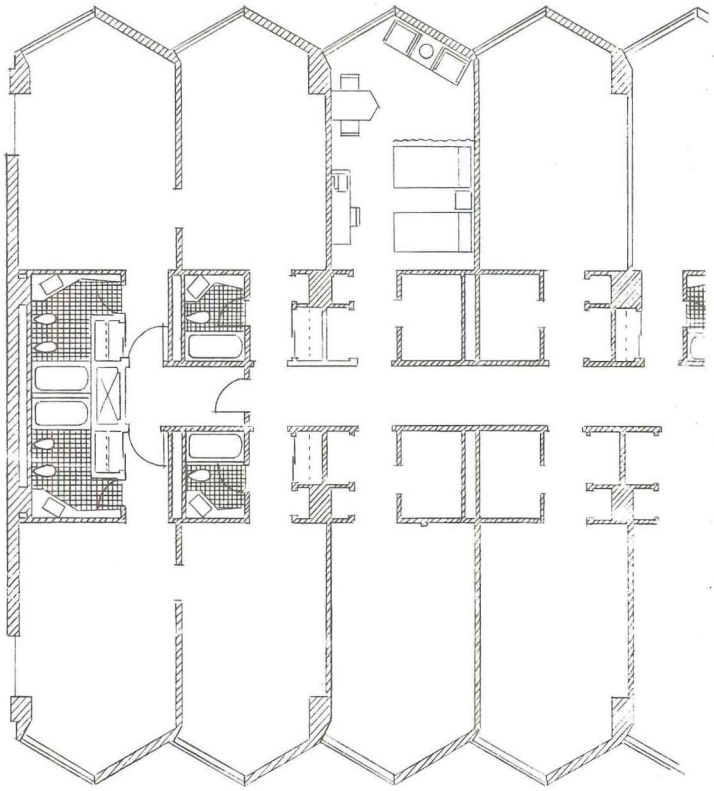
It could be built in any large city. A motor-hotel that contains every amenity for the convenience, comfort and pleasure of guests. There would be a 2,000-seat convention hall on the first floor. Health clubs with whirlpool baths for both men and women. Inside and outside swimming pools. And a shaft containing a glass-walled passenger lift would soar from the lobby area, through an edge of a swimming pool, to an observation-floor restaurant 22 stories above.

LOF GLASS

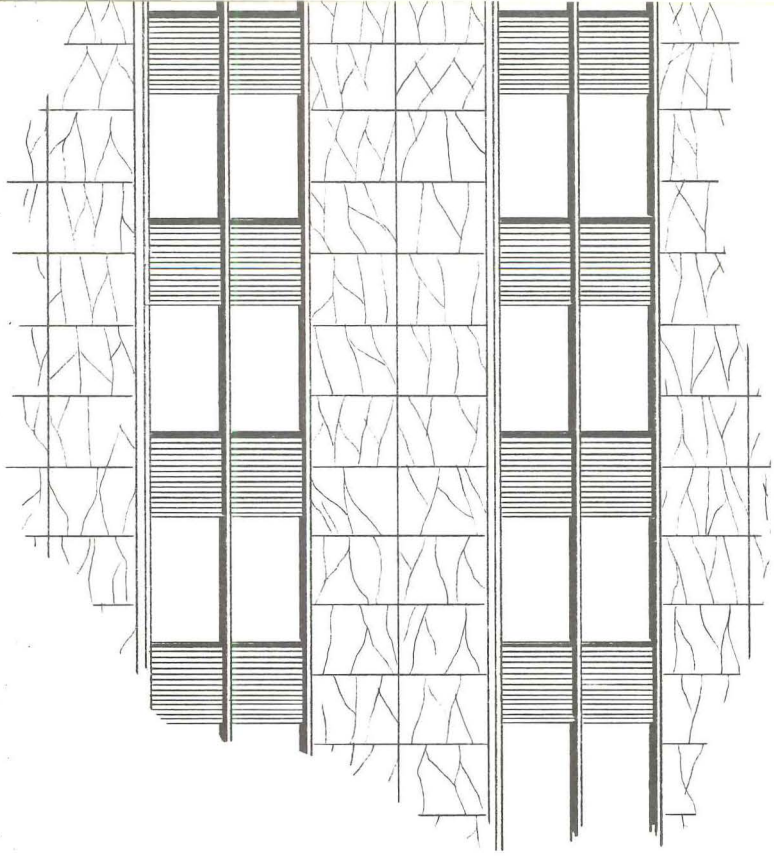
Each of the 504 guest rooms would have large windows affording spectacular views of the city. The 125 guest rooms located in the cabana area all have views over the pool. It is truly a structure of "Open World" design.

A. Epstein and Sons, Inc., Chicago-based international firm of Engineers and Architects, conceived the design and granted us permission to reproduce their renderings and plans to show you how L·O·F glass could make this Open World Inn as practical as it is pleasurable.

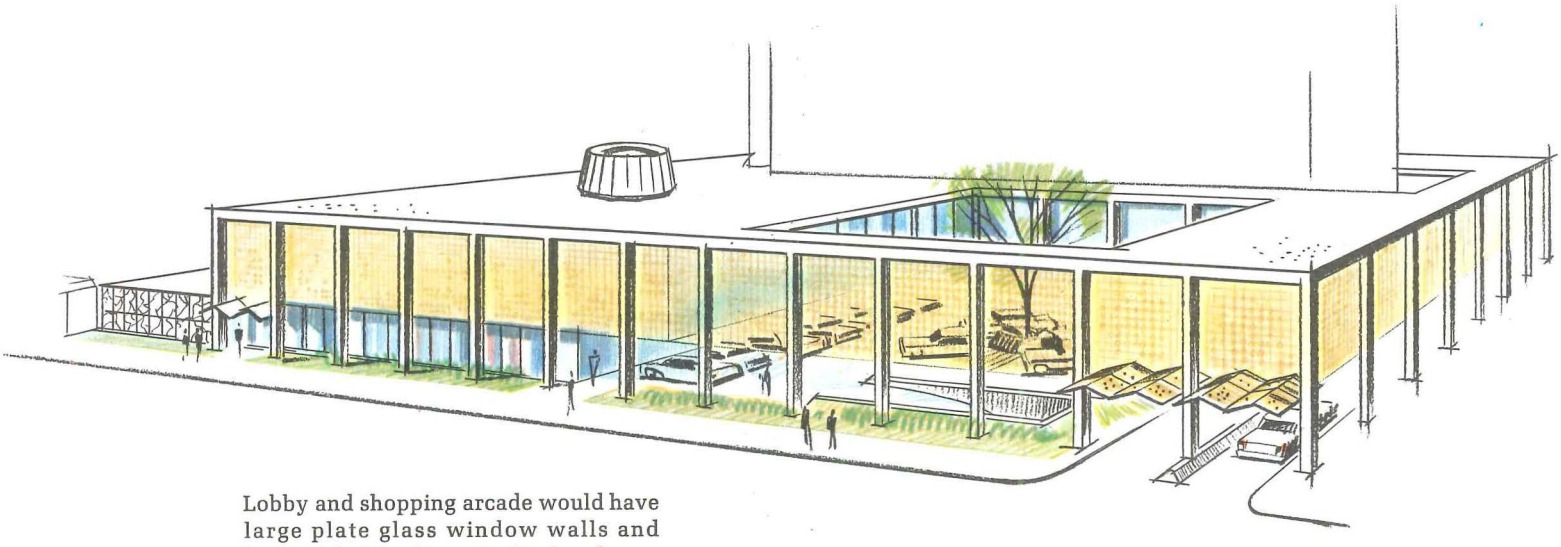




Typical tower floor plan. Sawtooth facade will control solar effects to minimize heat gain.



Detail of fenestration shows 6′ x 7′ windows of insulating glass.



Lobby and shopping arcade would have large plate glass window walls and tempered glass doors to display the attractive interior to approaching traffic.

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L·O·F GLASS

L·O·F GLASS FOR MOTOR-HOTELS

POLISHED PLATE GLASS
Parallel-O-Plate®, 13/64″, ¼″
Heavy-Duty Parallel-O-Plate, 5/16″ to 1″
Parallel-O-Grey®, 13/64″, ¼″
Parallel-O-Bronze®, 13/64″, ¼″
Heat Absorbing, ¼″
(grey, bronze and heat absorbing plate are available in heavy-duty thicknesses.)

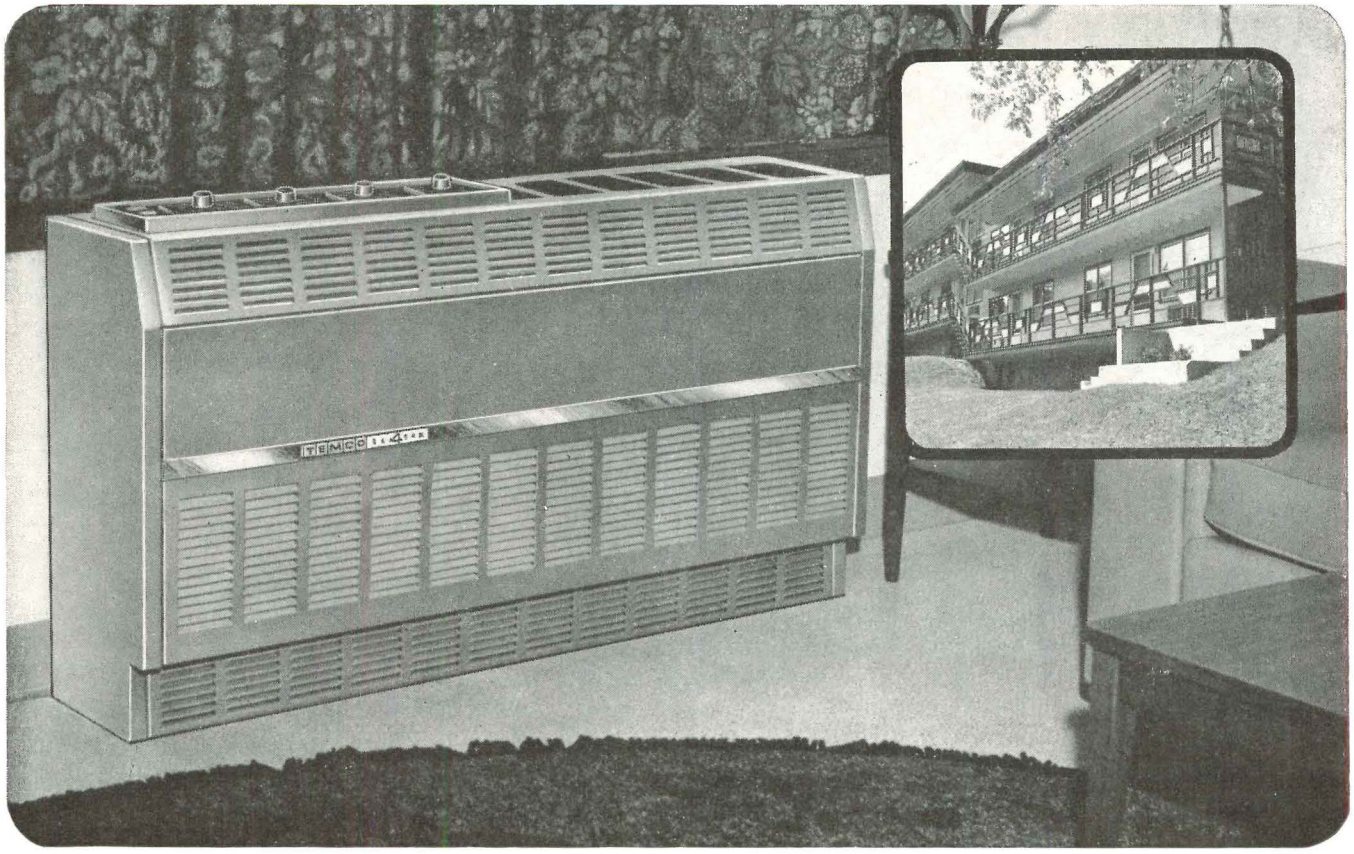
Rough Plate
INSULATING GLASS—Thermopane®
SPANDREL GLASS—Vitrolux®
Vitreous colors fused to back of heat-strengthened glass
HEAT-TEMPERED GLASS—Tuf-flex®
Doors and sidelights
WINDOW GLASS
PATTERNED & WIRED GLASS

L·O·F makes a particular kind of glass for every purpose in Open World design. Refer to Sweet's Architectural File, or call your L·O·F glass distributor or dealer, listed under "Glass" in the Yellow Pages.

Or write to Libbey·Owens·Ford Glass Company, 811 Madison Avenue, Toledo, Ohio 43624.

Libbey·Owens·Ford Glass Co.
Toledo, Ohio

Litho in U.S.A.



Key Apartments, Dubuque, Iowa, reports

TENANTS LIKE TEMCO 4-SEASONS 100%

Dale Wernecke, owner, KEY APARTMENTS, Dubuque, Iowa, says, **"The Temco 4-Seasons Heating and Cooling Units are ideal for apartments because we can meter each tenant separately for both heating and air conditioning."**

He also says that the 4-Seasons is less expensive and accomplishes the same end as a centralized system yet offers the advantages of the tenants' needs for either air conditioning or heating.

Tenants at the Key Apartments like the 4-Seasons because it permits them individually to select exactly the apartment temperature they want. They can switch from heating to cooling with a press of a button. Small wonder Mr. Wernecke says, **"My tenants and I like it real fine, just 100%!"** Your clients will be as pleased with their heating and air conditioning system as Mr. Wernecke . . . if you specify Temco 4-Seasons. Get full information today. Mail coupon.

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S See Sweet's Light Construction Catalog File, Section 30a/Te.

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Name_____

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Look what they're doing with steel framing for schools these days

Architect: Bruce and Parrish AIA and Glenn Quincy Johnson AIA; Engineer: John A. Bedingfield & Associates; Structural Engineer: Matthew Bodo; Steel Fabricator: Coastal Steel Construction Co.; General Contractor: Earl Lamb.

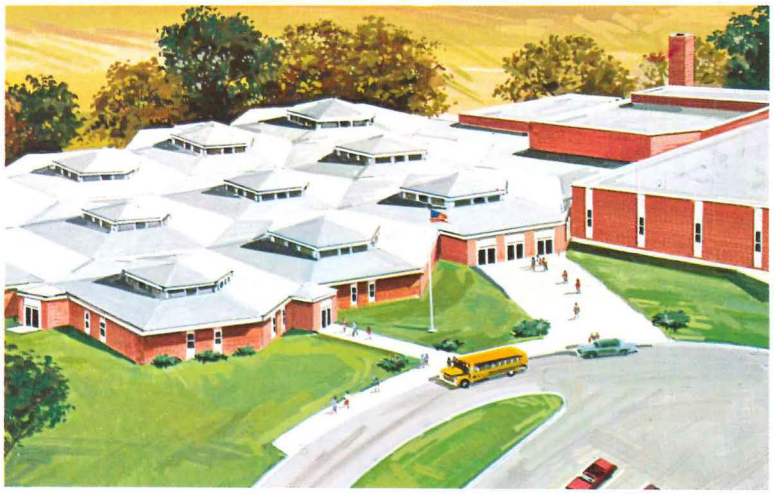
Azalea Junior High School
Pinellas County, Fla.

This 1,000-pupil junior high was designed with a steel frame, and low bid was well within the budget. Steel framing also helped speed construction: the school was occupied only 10 months after the contract was awarded.

Architect: John F. Lipaj Associates; Engineer: R. M. Gensert Associates; Steel Fabricator: Republic Structural Iron Works; Steel Erector: Tri-County Erection, Inc.; General Contractor: Dileno Construction Co.

Arlington Elementary School
Parma, Ohio

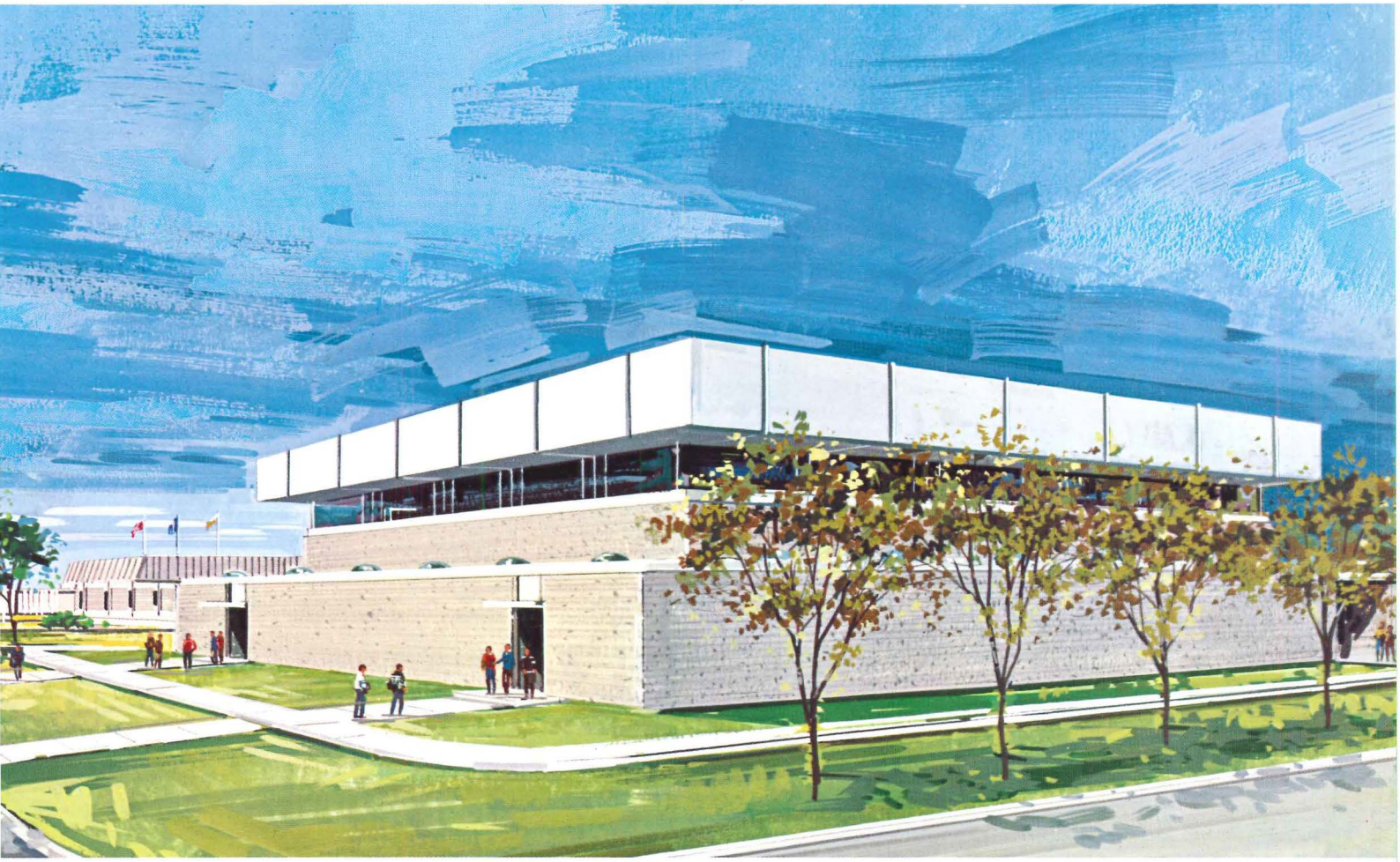
Taking advantage of the flexibility of steel design, the architects came up with this steel-framed school-in-the-round. Each room has its own entrance from outdoors, and the classrooms are exceptionally spacious as well as attractive.



Architect: Pope, Kruse & McCune; Engineer: L. H. Doane Associates, Inc.; Steel Fabricator: Pilgrim Steel Company; Steel Erector: Erectors, Inc.; General Contractor: William C. Ehret, Inc.

Thomas McKean High School
Wilmington, Del.

Steel's flexibility is strikingly exhibited in the hexagonal steel pods which make up this functional design. Each pod contains six classrooms. The design led to economical fabrication of steel because of repetition between pods. And the overall effect is unique.



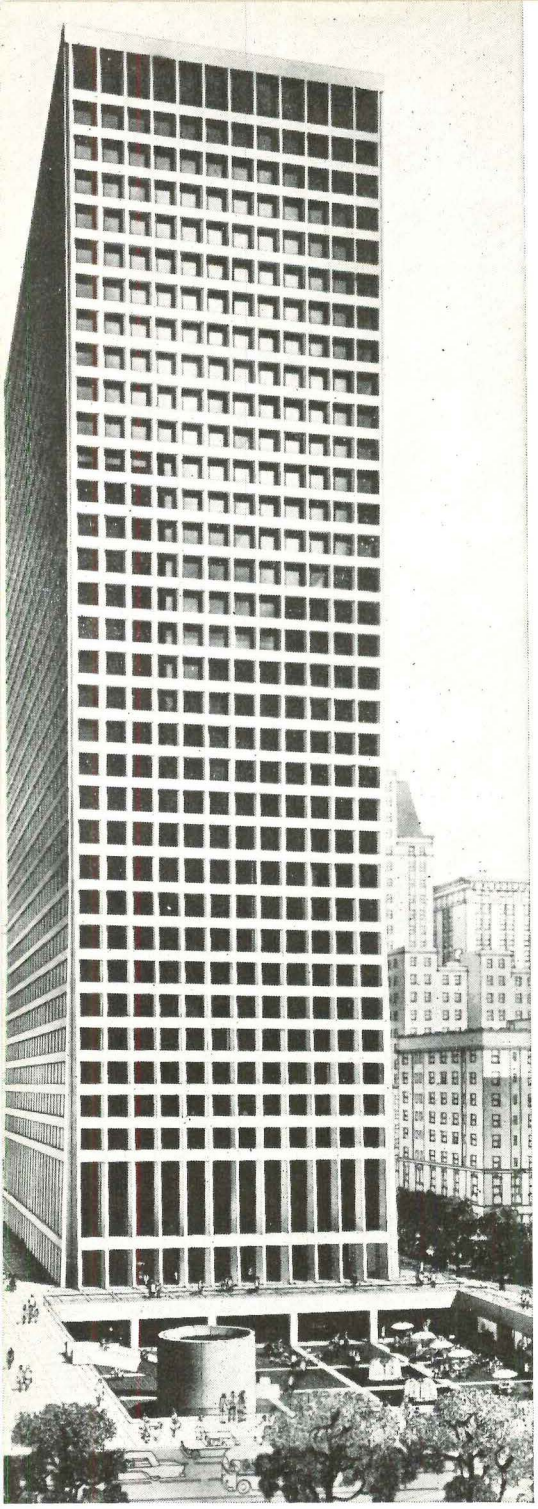
Architect: Pharo & Haas Architects; Engineer: G. Edwin Pidcock Co.; Steel Fabricator: Bethlehem Fabricators, Inc.; Steel Erector: Posh Construction, Inc.; General Contractor: William P. Doall, Inc.

East Hills Junior High School
Bethlehem, Pa.

Steel framing in the roof structure gives this gymnasium completely column-free space below. Separated from the rest of the junior high school, the gymnasium is an attractive structure on its own. Folding doors inside increase the usefulness of the main floor.

Many advantages are yours when you build with steel: economy, freedom of design, adaptability to difficult sites, ease of future expansion both laterally and vertically, low maintenance over the years.

BETHLEHEM STEEL
BETHLEHEM STEEL CORPORATION, BETHLEHEM, PA.



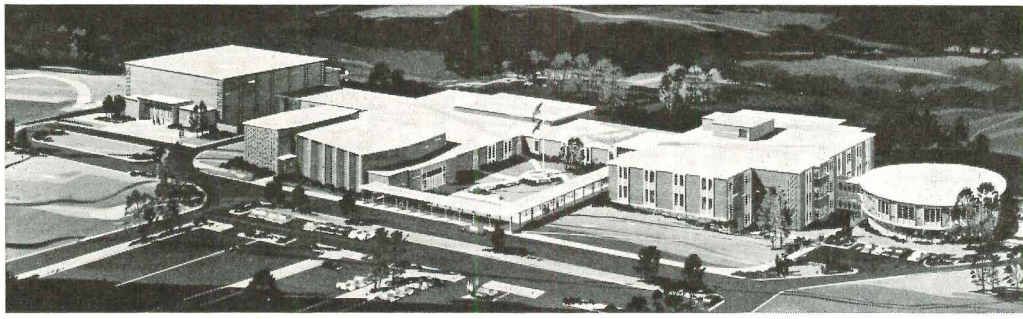
DALLAS, TEXAS: 34-story, 1,000,000 sq. ft. One Main Place office building. *Architects:* Skidmore, Owings & Merrill; Harwood K. Smith and Partners. *Engineer:* Herman Blum. *Contractor:* Henry C. Beck.

CHICAGO, ILLINOIS: 33-story, 600-room Holiday Inn motor hotel. *Architect/Engineer:* William Bond & Associates. *Contractor:* Turner Construction Company.

WHITTIER, CALIFORNIA: 172,000 sq. ft. Broadway department store. *Architect:* Charles Luckman Associates. *Electrical Engineer:* C. E. Mauk.

SPRINGFIELD, MASSACHUSETTS: 5,000 sq. ft. Metropolitan Life Insurance Company branch office building. *Contractor:* A. C. Dufault. (Design by Metropolitan Life Insurance Company architects.)

TAMPA, FLORIDA: 8-story, 97,000 sq. ft. IBM office building. *Architect:* Aeck Associates. *Engineer:* Blakely-Daniels and Associates. *Contractor:* International Construction Co.



JOHNSON COUNTY, KANSAS: 2000-student, 287,400 sq. ft. Shawnee Mission South High School. *Architect:* Tanner, Linscott & Associates. *Engineer:* Scott, Kinney, Holloway and Perkins. *Contractor:* Sharp Brothers Construction Company.

Now...the big ones are going All-Electric

More and more architects and engineers are finding that all-electric design, with flameless electric heating and cooling, can hold down first costs for clients in buildings of all types through the elimination of such items as boiler rooms, fuel storage, stacks and long pipe or duct runs.

Annual costs can also be reduced, since simpler control systems and lower maintenance require fewer employees.

Moreover, because of the wide variety of equipment types to choose from, all-electric design permits greater architectural freedom and flexibility. Expansion becomes easier, too. And all-electric design can also provide from 5% to 10% more usable floor space for additional building capacity.

For more facts about the proven advantages of applying all-electric design to your industrial and commercial buildings, call your local electric utility company. They will welcome the opportunity to work with you.

This plaque identifies a modern building, meeting the standards of electric heating, cooling, lighting and other applications set by Edison Electric Institute.

ALL-ELECTRIC BUILDING AWARD

LIVE BETTER ELECTRICALLY

Edison Electric Institute, 750 Third Ave., New York, N.Y. 10017

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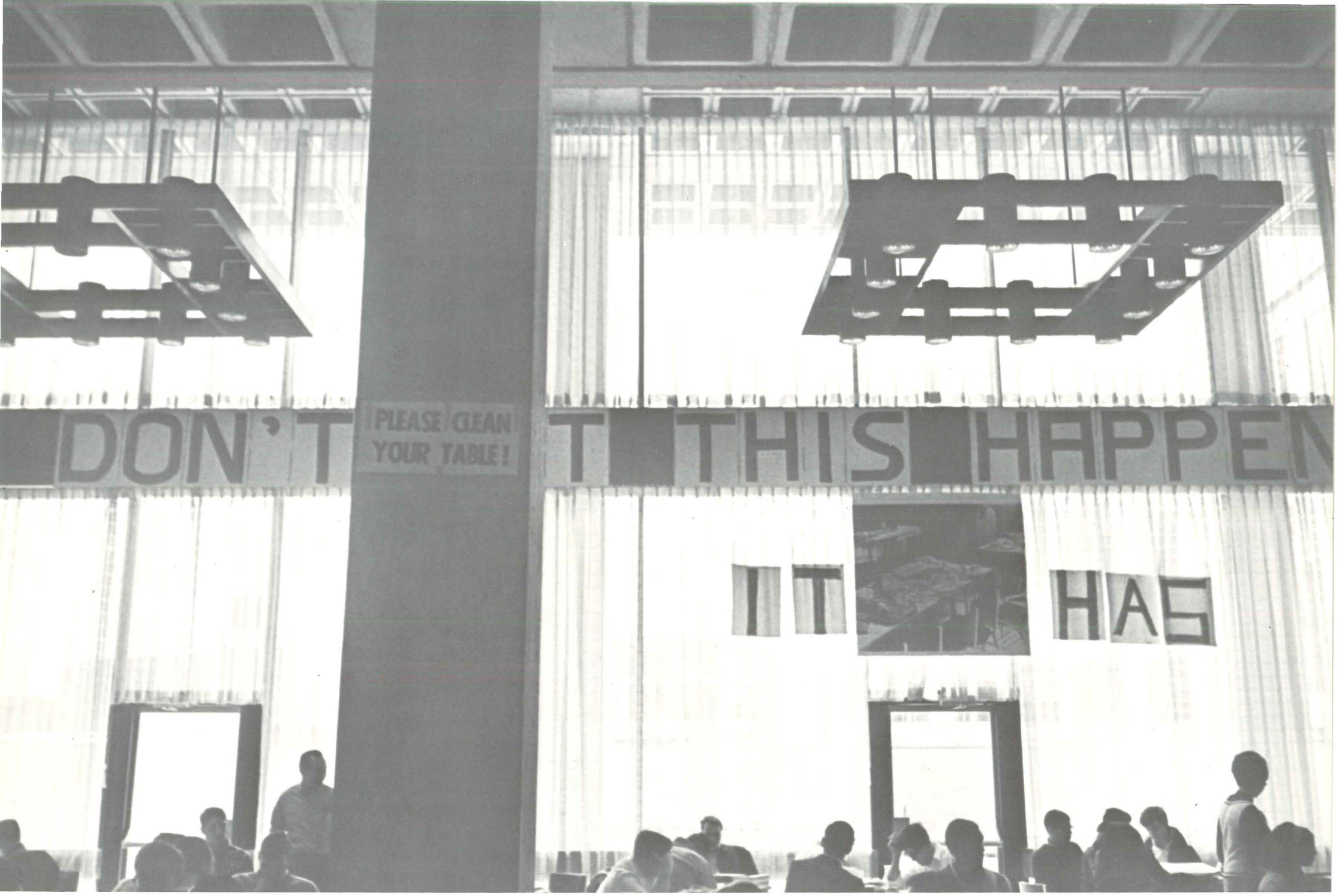
"Perhaps we make a mistake in giving every student the feeling that he is a genius destined to explore uncharted seas of architectural creativity. Real originality and creativeness will make themselves felt regardless of the schools. And the world might be better off if the majority of us, those who don't have these gifts in large measure, were to view our chief contribution as one of consolidating and refining the products of the few profound innovators. This direction may offer the architectural profession its best chance to meet the great and increasing demands upon it."

FROM THE REPORT OF THE
1966 HONOR AWARDS JURY


DON'T
PLEASE CLEAN YOUR TABLE!
T THIS HAPPEN
IT
HAS

Will the profession become fragmented? This subject is discussed from time to time, but usually in terms of building function specialization rather than as a fragmentation process affecting the *kind* of work performed by the members of the profession. In other words, the argument centers around the question: Should an architect become a specialist in designing schools, or hospitals, or some other building type, or should he have a general practice; but the other sort of specialization, the one where an architect might become concerned exclusively with the design of one aspect of buildings, such as circulation patterns, or construction systems, or audio/video environments, is pretty much submerged in the presently popular outcry that an architect is and should be a generalist.

Most other professions fragmented a long time ago and are now going through a process of subfragmentation. Science split into physics, biology, chemistry, biochemistry, and many other disciplines. Now it is splitting ever further. Physics, for instance, is not only divided into subspecialties, but even a subspecialty such as high-energy physics is divided further among three distinct groups of professionals: the theorists, who are specialists in mathematical physics and attempt to predict or interpret results of experiments; the experimentalists, who are specialists in conducting the experiments; and the instrumentalists, who are specialists in designing the equipment needed for the experiments. Only a few years ago, all three functions were performed by one person. Today, the specialization in these sub-sub-areas is so great that a person involved in one cannot cross to the other without retraining.

And yet, there is a beginning of a "getting together" of the innumerable disciplines of the scientific world for the purpose of discussing a problem of interest to them all. The hope is to arrive at some conclusions, perhaps even find solutions, by talking jointly about one subject.

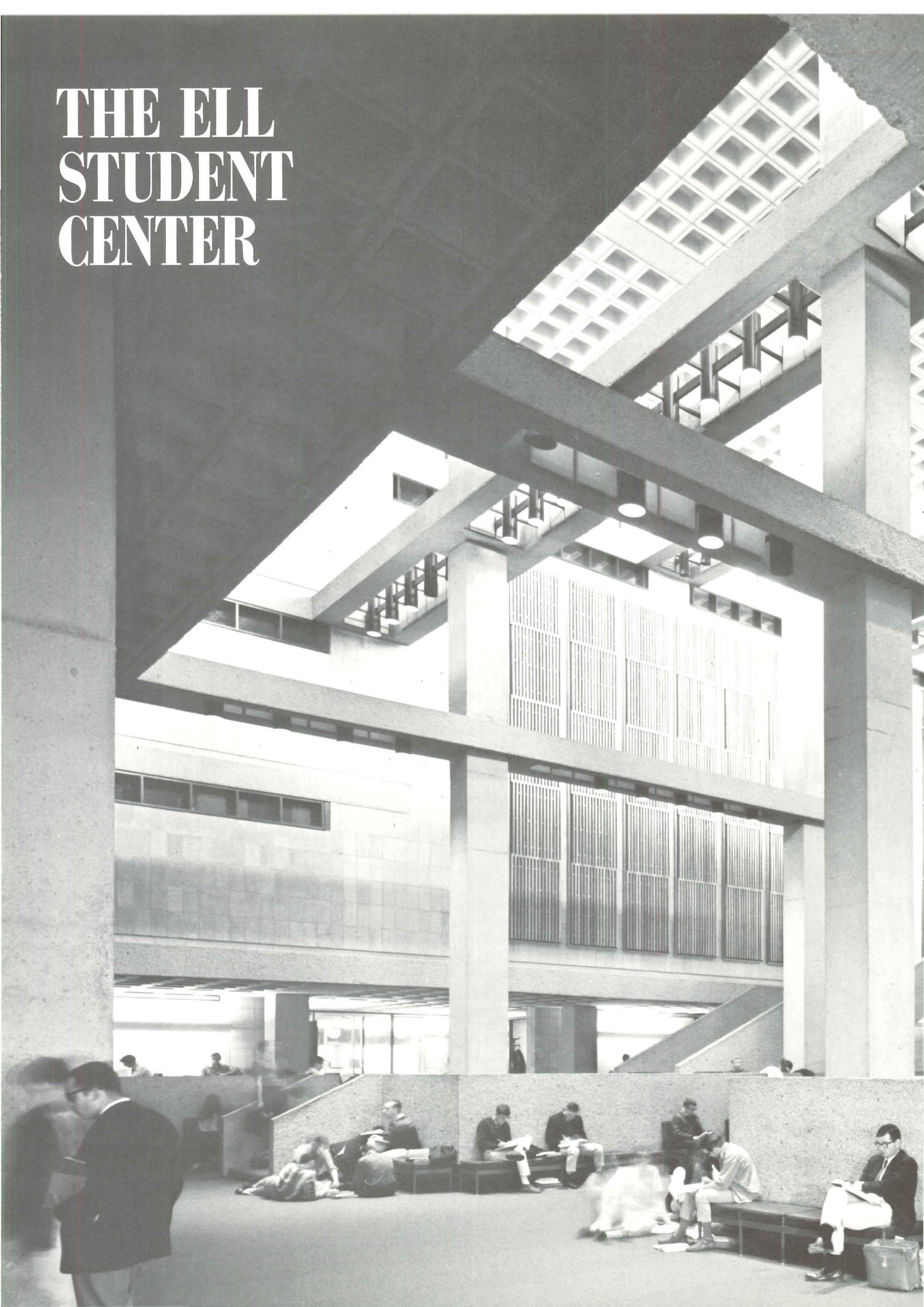
For instance, at a recent meeting of the American Association for the Advancement of Science, which dealt with the subject of "Behavior, Brain, and Biochemistry," the opening remarks included a reminder that, due to this conference, "For the first time in modern scientific history there now flourishes a sophisticated, multidisciplinary, serious, scientific inquiry into *mind*—memory, learning, problem-solving, thinking. For the first time, biochemists, chemists, pharmacologists, physiologists, geneticists, anatomists, and psychologists have been banding together in an attempt to understand the operation of the brain."

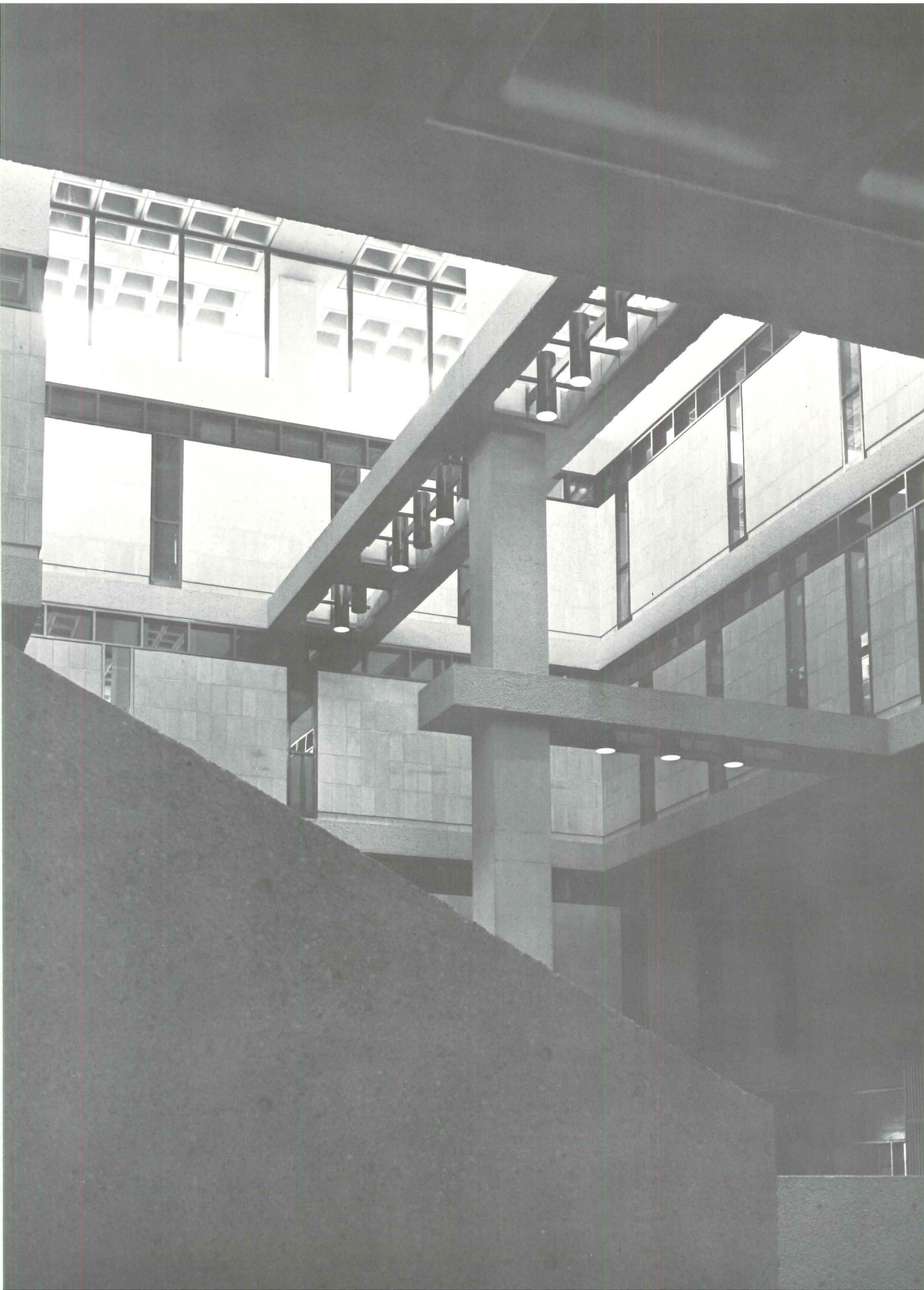
It is interesting that there is no mention here of an attempt at creating a profession of generalists, perhaps called "mindologists," who would be mind experts. The "banding together" of a group of people who attempt to deal with a specific problem, parts of which fall within their various fields of study and expertise, differs from an effort by one person at synthetic knowledge.

Such process of fragmentation on the one hand and coalescence on the other is inevitable in the area of architecture. Structural engineering, climate control, landscape design, interior design, and many other aspects of building design have already become specialties of their own. And more specialties are being added every year, not only those based on considerations traditionally associated with the design of buildings, but also more novel ones such as space psychology or urban ecology.

The importance of the fragmentation process is obvious. It involves not only the need for a totally different approach to architectural education, but also the necessity for the restructuring of the whole profession. How to best achieve this, and especially how to coalesce the fragments, are questions that will be argued for quite some time. It will be an interesting debate. ■

THE ELL STUDENT CENTER





Precise detailing for a simple structural system creates an impressive interior space.

CARL S. ELL STUDENT CENTER, NORTHEASTERN UNIVERSITY, *Boston, Massachusetts.* ***Architects:*** *Shepley, Bulfinch, Richardson, Abbott; Jean Paul Carlhian, partner in charge.* ***Site:*** *Student center for a downtown university. Land is at a premium in this congested area and foundation problems preclude high-rise structures. Restricted site with connections directly to the existing Alumni Auditorium along north elevation utilizing a party wall. Existing west concourse to be major access on the second floor. Existing central corridor at grade–4 ft carries most student traffic as the main connection with a complete system of pedestrian tunnels. Existing service drive on east side to be shared with auditorium. Limited courtyard on west was permissible. A main porte-cochere to the east from a proposed quadrangle to be provided.* ***Program:*** *Building elevation to conform to existing campus buildings built in the 1930's. The architects were allowed design freedom in the interior. Eating facilities for 1200 students at one sitting, flexible meeting rooms, rehearsal and experimental theater connected to existing auditorium and game rooms. The center is open 16 hours a day to over 10,000 students for day- and night-school use. The university operates on a year-round basis, closed only 12 days of the year. Building will act as a recreation and social hall for resident student.* ***Structural System:*** *Reinforced concrete frame waffle slabs, block and brick infill.* ***Mechanical System:*** *Hot water fin tube oil fired heating. Cooling in cafeteria only, low velocity system. Ducted ventilation of remainder of building sized for eventual installation of cooling system.* ***Major Materials:*** *Exterior: brick, painted steel windows, exposed concrete. Interior: exposed concrete columns and slab pan system, suspended metal pan in cafeteria, brick and painted block and ceramic tile. Floor surfaces: carpet, terazzo, vinyl absestos tile.* ***Cost:*** *Final construction, $3,065,000 (including carpeting); $26.25 per square foot.* ***Consultants:*** *Le Messurier Associates, Structural Engineers.* ***Contractor:*** *Jackson Construction Co.* ***Photographs:*** *See photo credit listing, p. 233.*

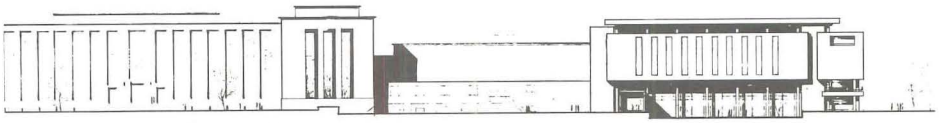
The Student Center is unfortunate in being surrounded by an architectural environment that has not yet acquired the charm of age. If the Northeastern campus had abounded in the eclecticism of Ivy Tudor Gothic instead of the heavy-handed vertical monumentality of the 30's, the architects might have been permitted a total digression from the surrounding campus.

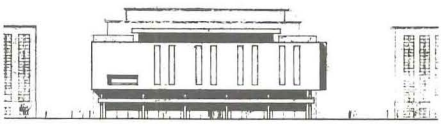
They could then have extended the interior logic of structure and detail so well evidenced in the great student hall to the facade, making it a consistent building. Despite these adverse circumstances, and even though the present structure is straitjacketed by its environment and umbilically tied to the adjoining building, its massing is not unpleasant. It is a small indication of what might have been accomplished if campus conformity had not been imposed.

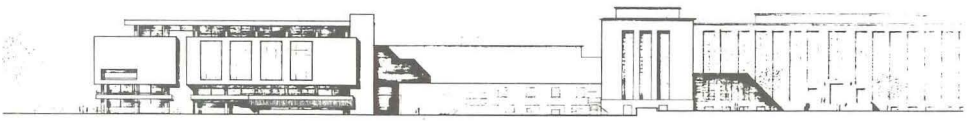
From the surrounding buildings, one is little prepared for the happy Brueghelesque confusion of a university dining room below as he enters and crosses the entrance bridge into the magnificent five-story space of the student hall.

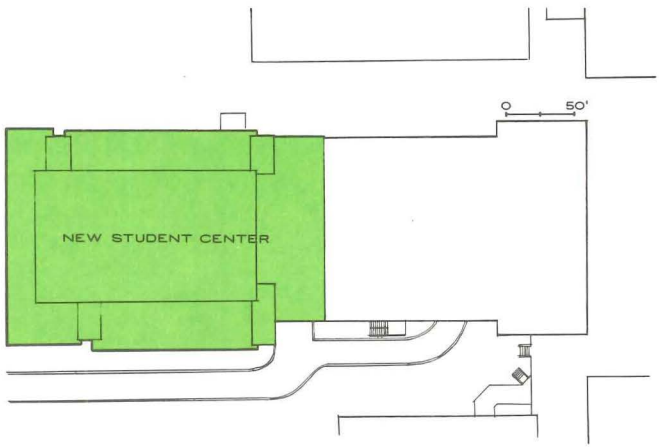
Columns rise from the floor of the lower lounge to support the roof 50 ft above. Stiffening open tie beams cross above, mixing their silhouettes with the precise pan systems of soffits on ascending levels, culminating in the precise waffle grid of the roof pattern.

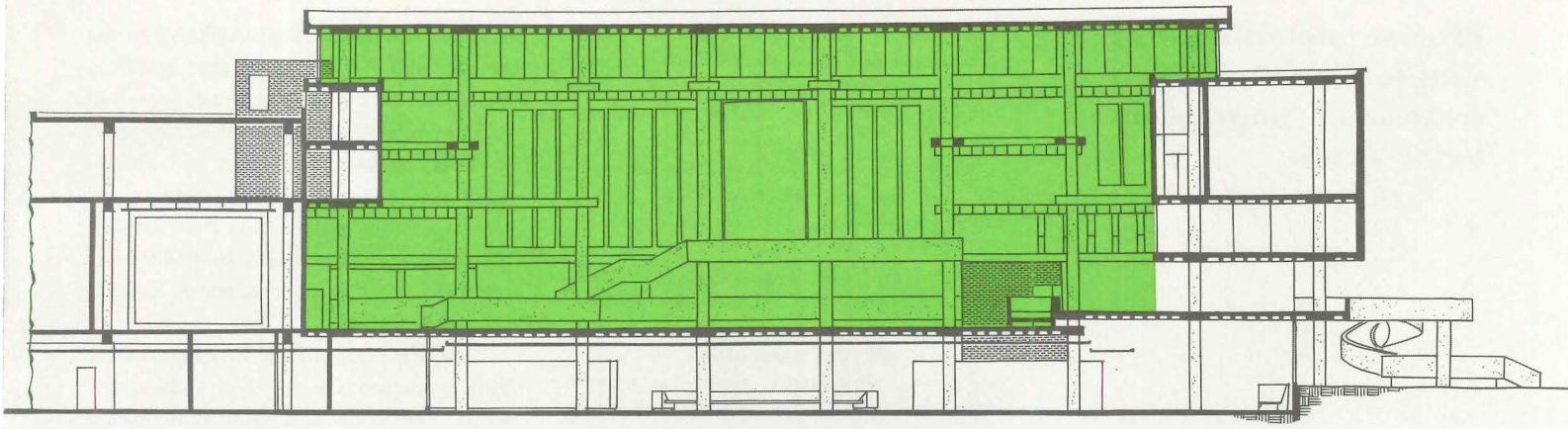
Sandblasted exposed concrete, soldier coursed block, wood acoustic baffles, and modulated partition lights echo structural patterns. A continuous clerestory sheds natural light into the navelike space augmented by cans placed in the beam openings and suspended chandeliers. The entire interior is tinted by the expanse of red carpet that transforms the dead gray











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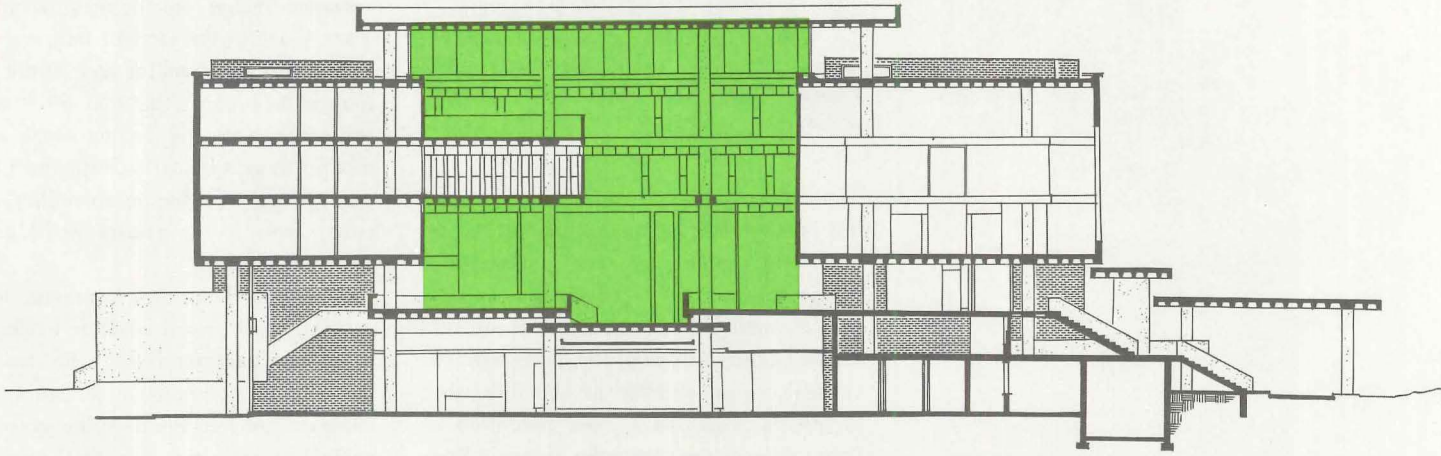

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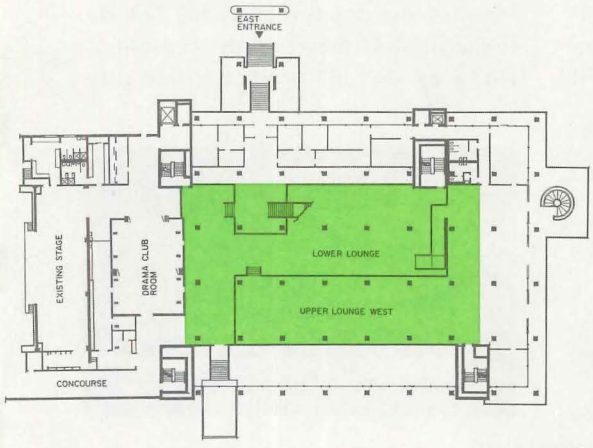

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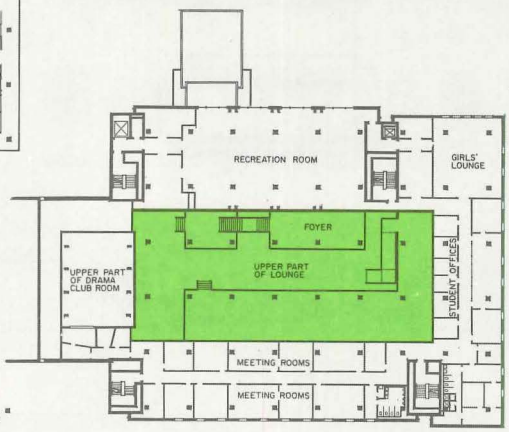

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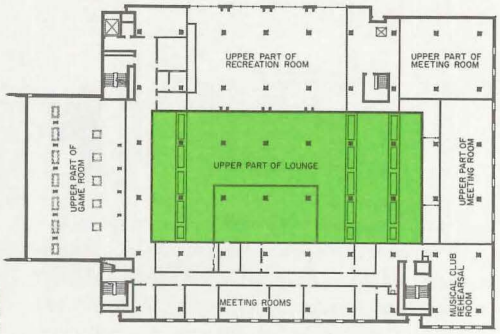

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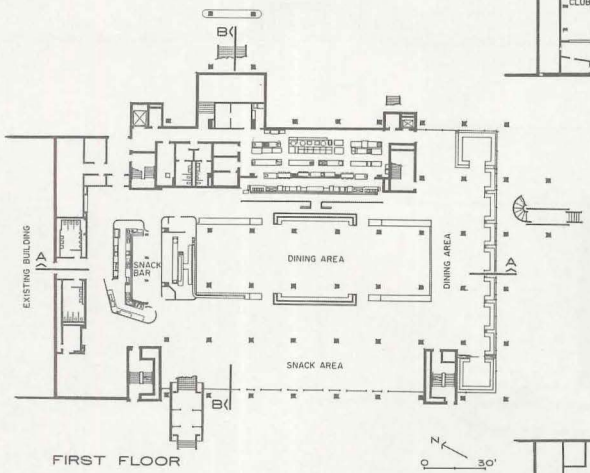

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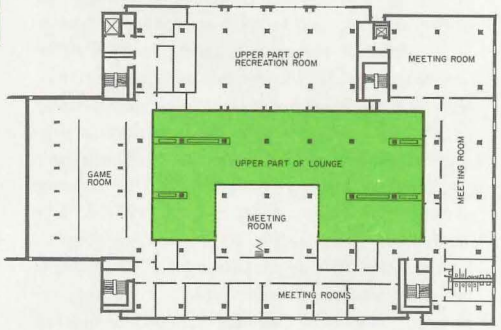

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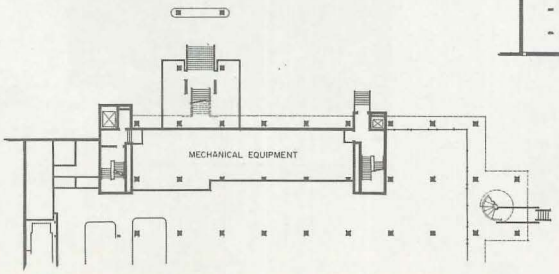


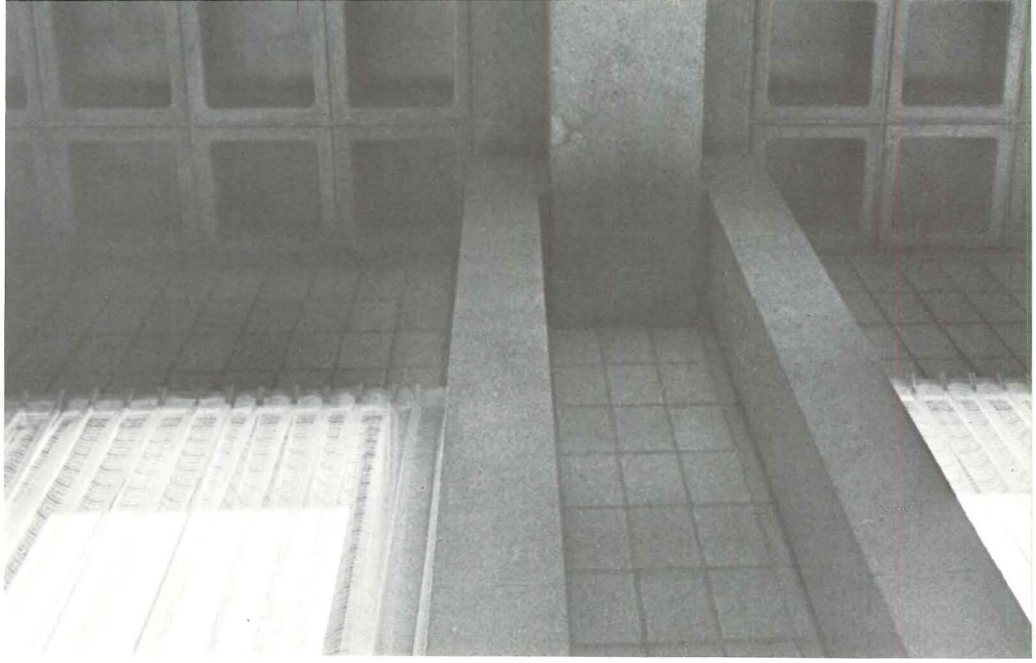
MEZZANINE

color of portland stone to the richness of living rock.

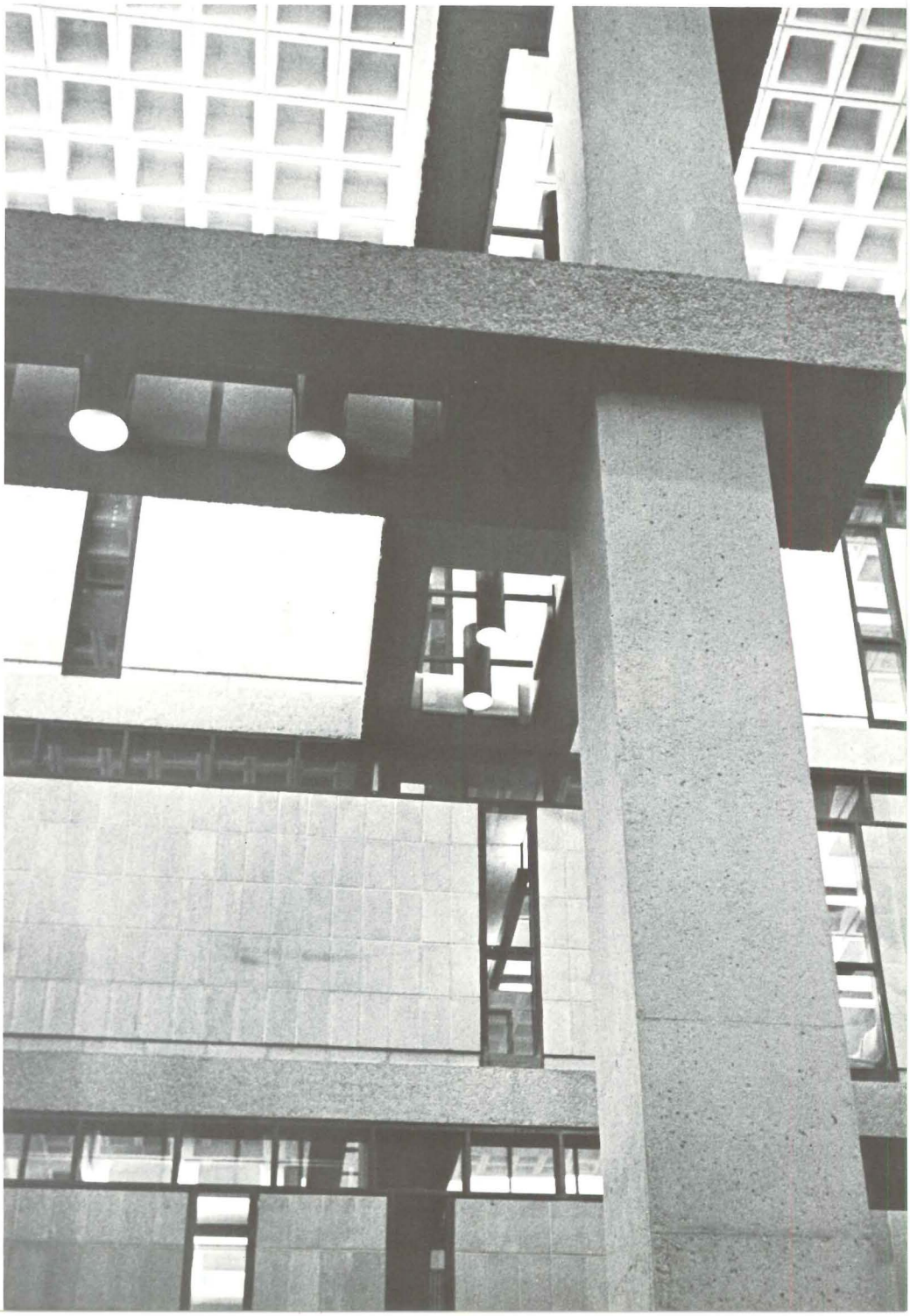
The accentuated logic of the structural system is the architecture of the space, and, more remarkably so because it is a comparatively uncomplicated system. It was described by Le Messurier as simply "one of a family of slab systems." What is unusual is the absolute modular control maintained by Carlhian and reinforced by the contractors' precision in execution. The control extends to all phases of detail. Simplicity is due to complicated detailing and the continuation of the logic of the structure throughout. The space and its flow is imaginatively conceived with respect for the forces that make it possible.

Carlhian stated that the intention of the building is to express the three components of architecture as separate entities: space, structure, and mechanical equipment. In so doing, he has created a paradox. The three form an indivisible unity. The structure is subordinate to the space and the mechanical system has been incorporated into the architectural module. The over-all impression is of one great space; the other two of Carlhian's components are realized, as they should be, as contributing factors.

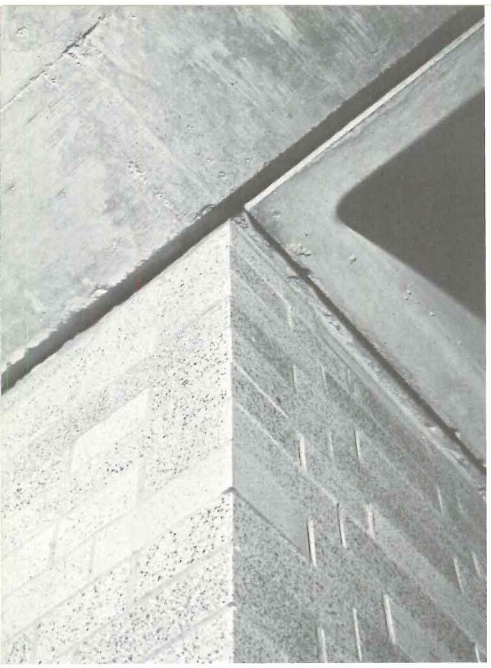
The modular system is 2′-1″ with bays

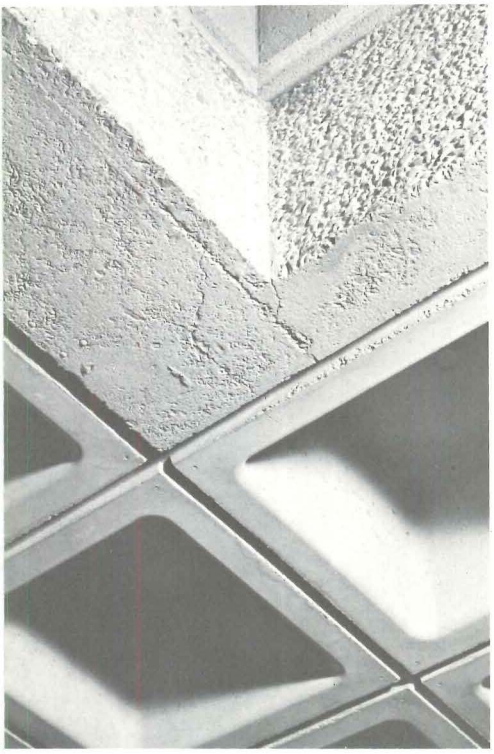


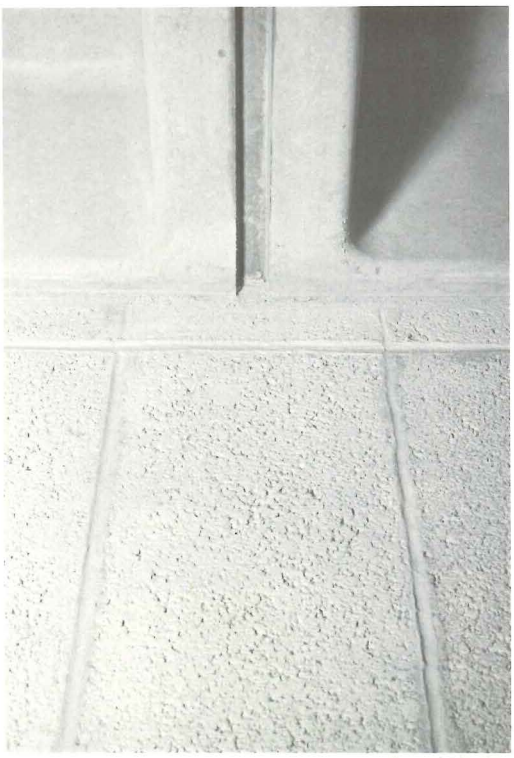
The slab edges in the guest room are supported by suspension from the overhead beam. The connection (above) illustrates this function.

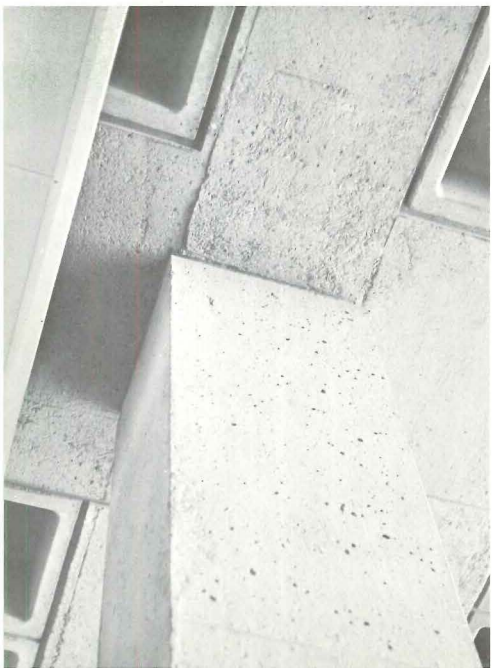


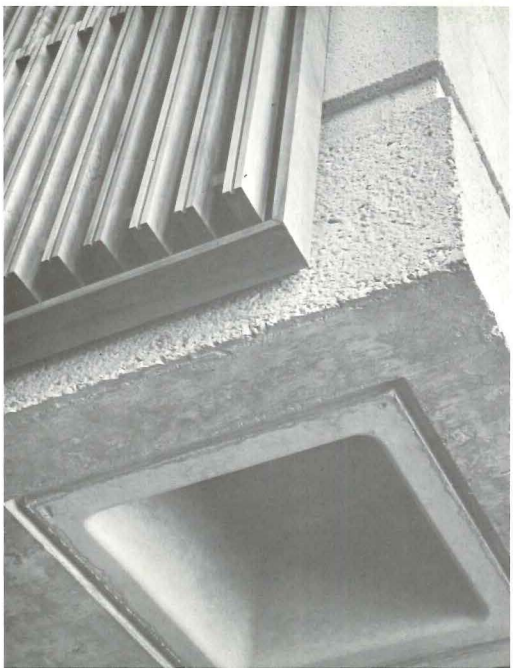
Facing page: The Ell Student Center contains 10,000 sq ft of red-carpeted lounge area that can seat 750 and allow an infinite number to lounge in picturesque student poses. There is also a ballroom that can seat 300 and can accommodate many more for dancing; game rooms with ping-pong tables, billiard tables, tables for checkers and chess, and ample room for kibitzers. Plus two music-listening rooms, a TV room, a cafeteria, a snack bar, and 28 meeting rooms available to all. A patio near the cafeteria allows dining in good weather. The girls' lounge contains shower stalls, lockers, a sewing and ironing room, a nap room, and a powder room.











of 20′-10″ x 27′-1″. Standard molded fiberglass pans were used with 1-in. sleepers to form dividing recessed strips. The concrete was carefully placed. Waffle edges are smooth, giving validity to job reports that no stripping difficulty was encountered.

The logic of the 2′-1″ module is more evidenced horizontally than vertically. Vertically, it is subtly blended with standard brick and block sizes in the 10 ft floor-to-floor dimension.

Carlhian chose the option of beam bands in the equation of bar and concrete to form cost. The wider and narrower beam strips at pan depth accentuate their function but do not confuse other structural elements, as would have been the case with a beam drop. The logic of this simple system is slightly negated by the recessed strip used as a design feature at the column capital.

Acoustic treatment was well handled throughout, although it could do without the air-conditioning contribution to the decible level.

Lighting levels within the gallery are adequate to read by as evidenced by students reclining comfortably on the rugged lounge floor studiously doing their homework or more studiously meeting girls in the hour that Carlhian says they are allotted to "eat, attend a meeting, and meet a girl."

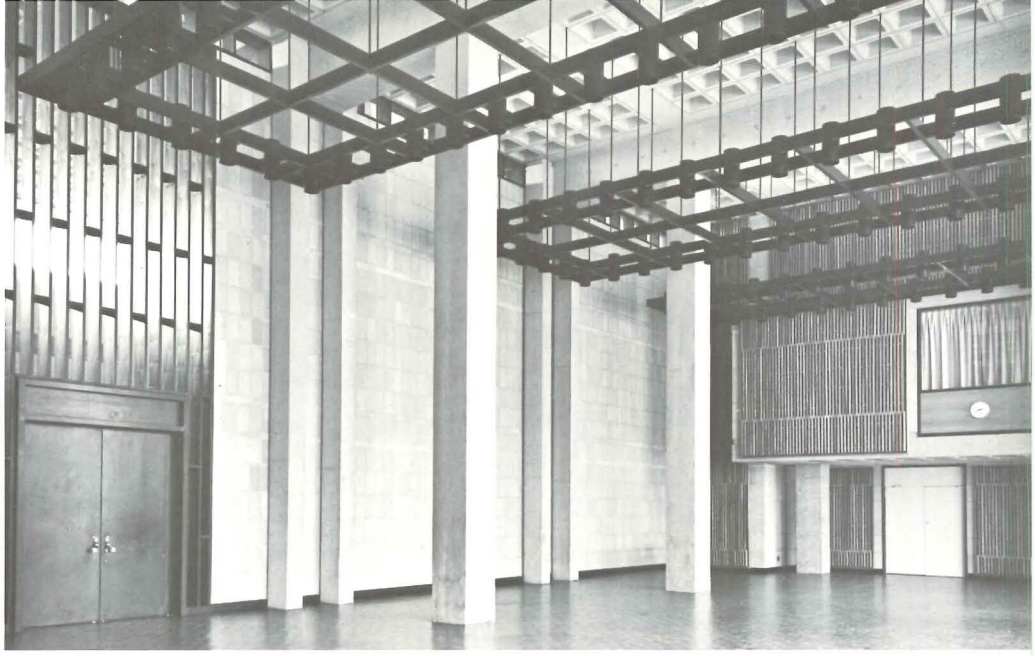
A lamping problem may develop in the cans of the higher beams and in some of the chandeliers. However, this problem is overcome every day in commercial installations. A little ingenuity on the part of the maintenance staff and the judicious use of "man helpers" should simplify rebulbing.

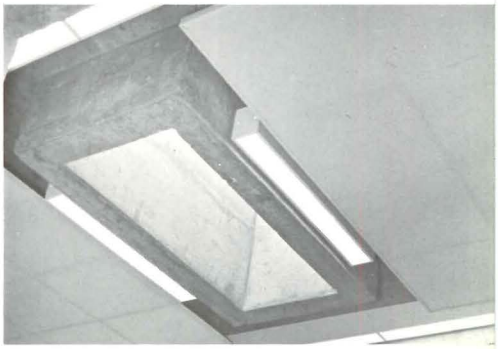
The structure is fully expressed

The soldier coursed block walls have a recessed 4-in. block base that reads on both interior and exterior walls. It is continued as a recessed band at slab height on walls over one story. Brick walls were terminated at recessed pan edges. Lighting fixtures are suspended at pan recess transepts. Butting block is centered on pan module recess. Two-way light cans are suspended in tie beam openings with acoustic bats at the sides.

throughout. Columns are set free of partitions. The plan flows nicely on the lower levels with a fine consciousness of the suspended forms above. The tiered rooms and corridors overhanging the magnificent interior space are perforated to make one conscious of the center hall.

One wonders from this exploitation of a simple structural system if the old arguments of truth of structure being the essential nature of design were not too easily layed to rest by "joy" and "delight." There is a good deal of joy and delight if such adjectives can be applied to architecture, resulting from this careful use of a simple structural system. Those who pan the decorative aspects of structure should be sure they handle their pans as well as Carlhian.—FW

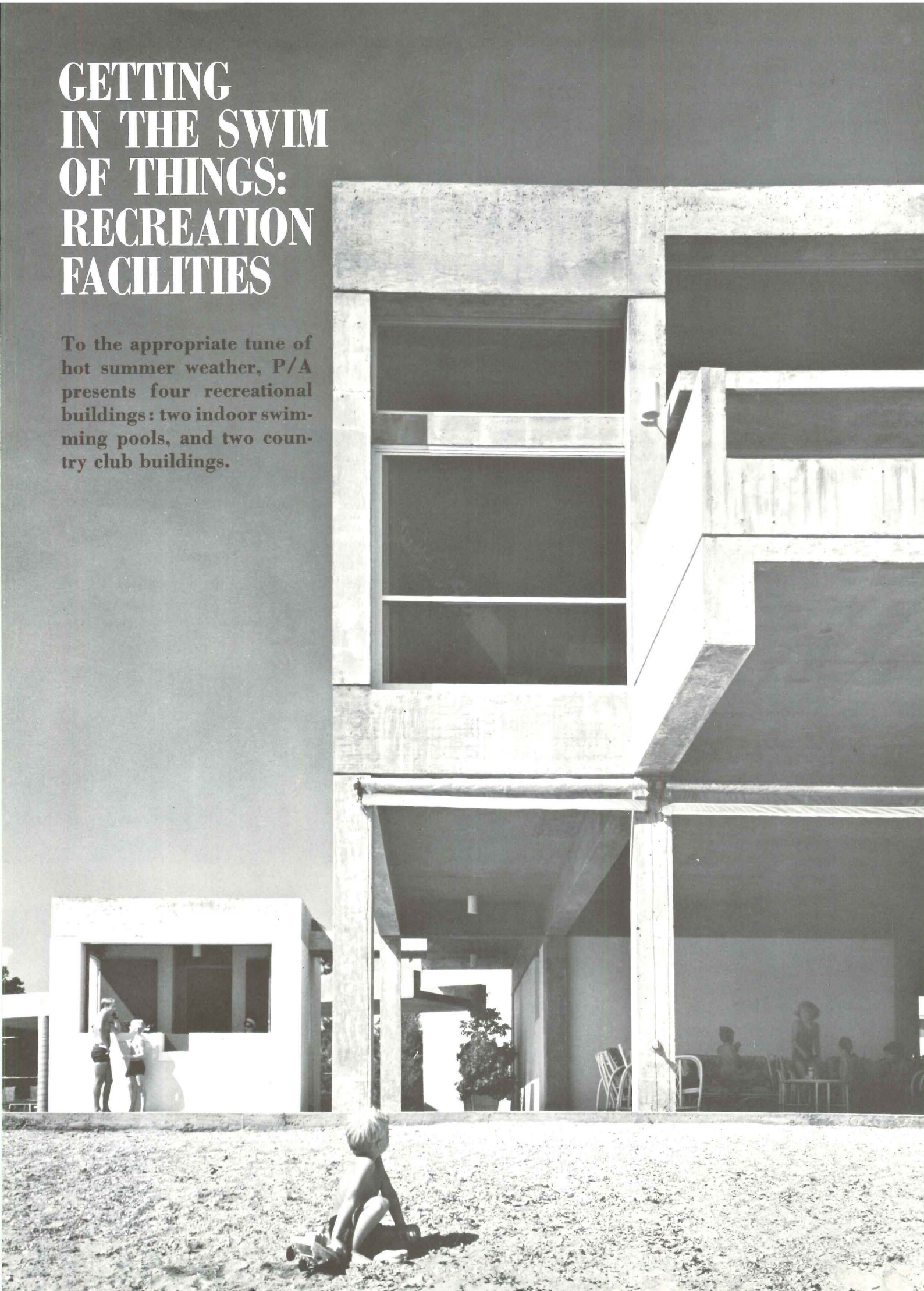


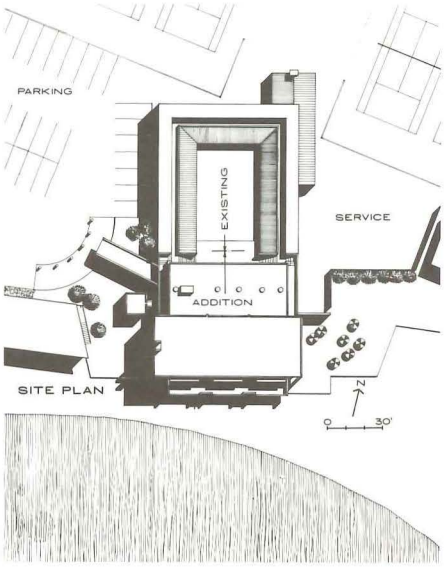


Duct work and mechanical equipment is concealed in the corridors by a hung ceiling. Lighting is at the side, with the soffit extended to the walls to cover room duct connections. Ceiling, lights, doors, sidelights, grills, and all other equipment is coordinated with block and brick dimensions.

GETTING IN THE SWIM OF THINGS: RECREATION FACILITIES

To the appropriate tune of hot summer weather, P/A presents four recreational buildings: two indoor swimming pools, and two country club buildings.





CONSERVATIVES GET WITH IT: CONCRETE À GO-GO

ADDITION TO THE TOKENEKE CLUB, *Darien, Connecticut.* ***Architects:*** *Sherwood, Mills & Smith.* ***Site:*** *Existing beach and tennis club on Long Island Sound. New addition had to be worked into old complex of club buildings; area was restricted laterally by two cabana buildings and longitudinally by the existing terrazzo dance floor and mean high-water mark at the beach. Vehicular access and members' parking to the west forced the entrance to be placed in the corner between old and new buildings.* ***Program:*** *Dining, snack bar and bar facilities of the club were to be improved—rebuilt if necessary. The new structure was to take advantage of the spectacular view of the Sound; construction was to be accomplished during the off-season months.* ***Structural System:*** *Wood piles, concrete pile caps, concrete columns, beams and slabs.* ***Mechanical System:*** *Electric forced flow heating in dining-lounge area cuts chill of cold evenings and hopefully extends the normal season (from mid-May to mid-September) by an additional month in the spring and fall.* ***Major Materials:*** *Structural frame is 5000 psi concrete with air entrainment agents to provide dense weather-resistant surface. Infill walls and partitions are stuccoed concrete block. Floors are concrete with steel trowel finish and hardener. Industrial cork insulation is used as an acoustical material in the dining-room-lounge ceiling. Doors and frames are wood throughout. Solar bronze glass is used in dining lounge to cut down glare and eliminate need for curtains.* ***Cost:*** *$180,000, general construction. Kitchen equipment, $20,000.* ***Consultants:*** *Fromme & Vosganian, Structural; Smith & Hess, Mechanical; Restaurant Design Group, Food Service Consultants; Friede R. Stege, Landscape Architect.* ***Photography:*** *David Hirsch.*

Concrete brutalism has hit the Connecticut country club set. The new addition to the club house in Darien, by Sherwood, Mills & Smith is a frank reinforced concrete structure with few genteel refinements. A constricted budget is one excuse for the lack of polished finish, but, by and large, the architects chose to make a forceful statement, to create a contrast between the club house and surrounding residential structures and to reinforce the existing concrete buildings of the club. It was a rather bold decision: Most clubs in the area are blithely eclectic, and most members are conservative in taste.

The program for the club aimed at improving the dining, snack bar, and bar facilities, and capitalizing on a rather spectacular view of the Sound. The old clubhouse consisted of an open-air dance floor surrounded on all four sides by two stories of bathhouse cubicles. It was impossible to see the water from the dance floor; and the bar, kitchen, and dining room were housed in informal wood frame appendages attached to the perimeter of the concrete structure.

The decision to take greater advantage of the view dictated the design solution: the south side of the bathhouse and the dining room-porch were taken down and the new dining room and lounge were raised to the second-story level. The height improved the vista for the dining crowd, and the area below was left open to give the dancers a view of the sea. During the daytime, the archway provides a shady sitting area. A snack bar was located

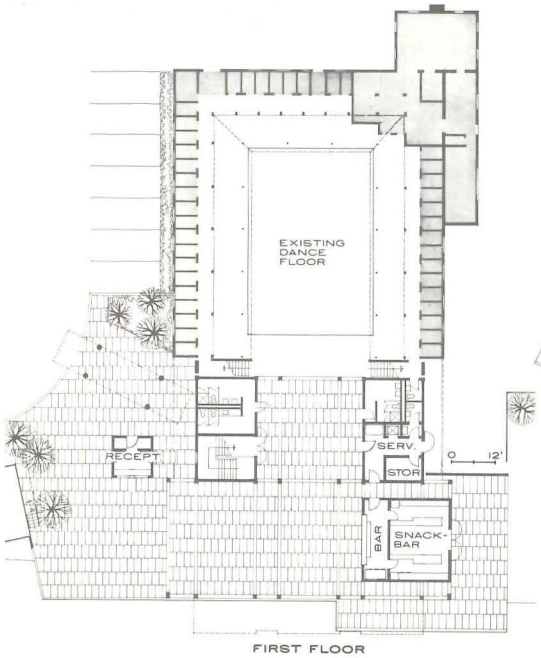
nearby, and oriented toward the swimming pool to the east, to cater to the bathing-suit set. A reception station dispensing towels and bathhouse keys is stationed near the entrance to the club—with a controlling view of the beach.

The design of the building plays upon an alternating rhythm of wide (16 ft) and narrow (8 ft) bays. The variation in the size of the bays was suggested by the dimensions of the service blocks at the rear of the lounge and dining room area. The rhythm is emphasized throughout the structure. On the south side, sliding glass doors provide a 16 ft clear opening in the wide bays while the 8 ft door panels stack in the narrow sections. Sunshades occur in the wide bays on the southern façade, and there are high windows for cross ventilation on the northern side. Balcony parapet walls are high for the narrow bays, low for the wide ones.

Although the building is rough finished, considerable care was taken with the details of the structure to produce a concrete frame that would require no patching or rubbing, in spite of the handicap of winter construction schedule. In addition, the various components of the structure were to be expressed and even accentuated. Care was taken in laying out the concrete forms to provide an organized pattern of joints and the 4 ft plywood module was related to the 8′-16′-8′ rhythm of the structural bays. A ¾ in.-deep reglet was introduced at the termination of each pour, generally at the throat of the columns, to emphasize construction joints. Concrete beams and slabs were formed with 1 x 4 boards to differentiate between subsidiary parapet walls and the plywood formed concrete frame. Form tie holes in parapet walls were expressed.

On the interior, something of the starkness of the structure is alleviated by the warm colors of the furnishings: upholstery and table cloths are warm oranges and yellows, and contrasting with the gray concrete are the tweedy carpeting textured industrial cork, and sand finished white stucco walls. Chairs, settees, and fabrics were furnished by Knoll Associates.

In spite of the boldness of the design, the conservative members of the Tokeneke club are pleased with the spirit of the place. They are proud of themselves for having built a "modern" building although they do not think of themselves as modernists. Raw concrete has established a beachhead at Darien.



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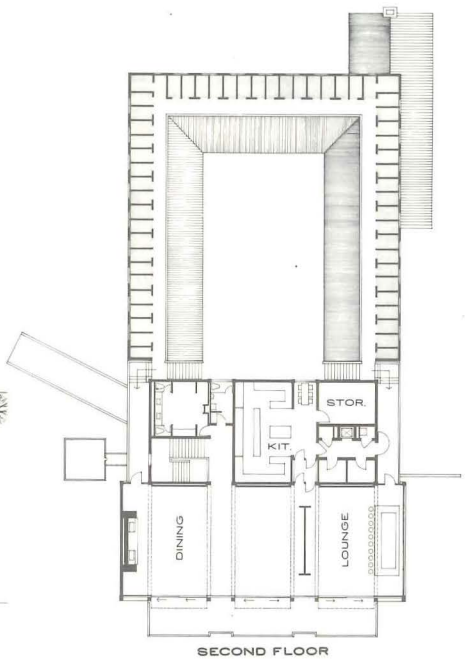

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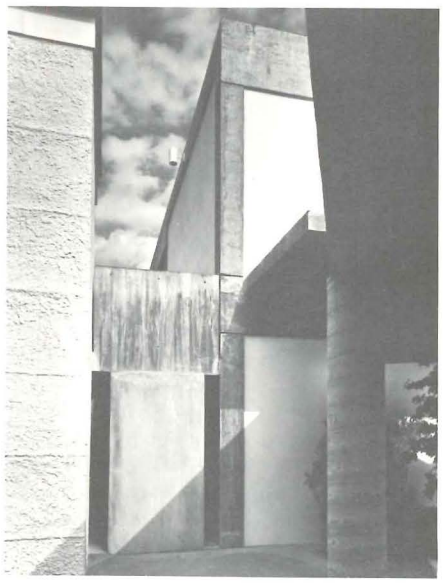

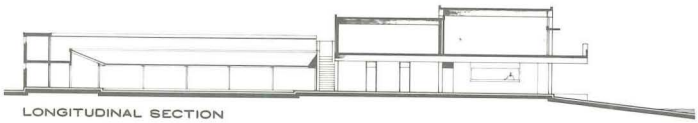
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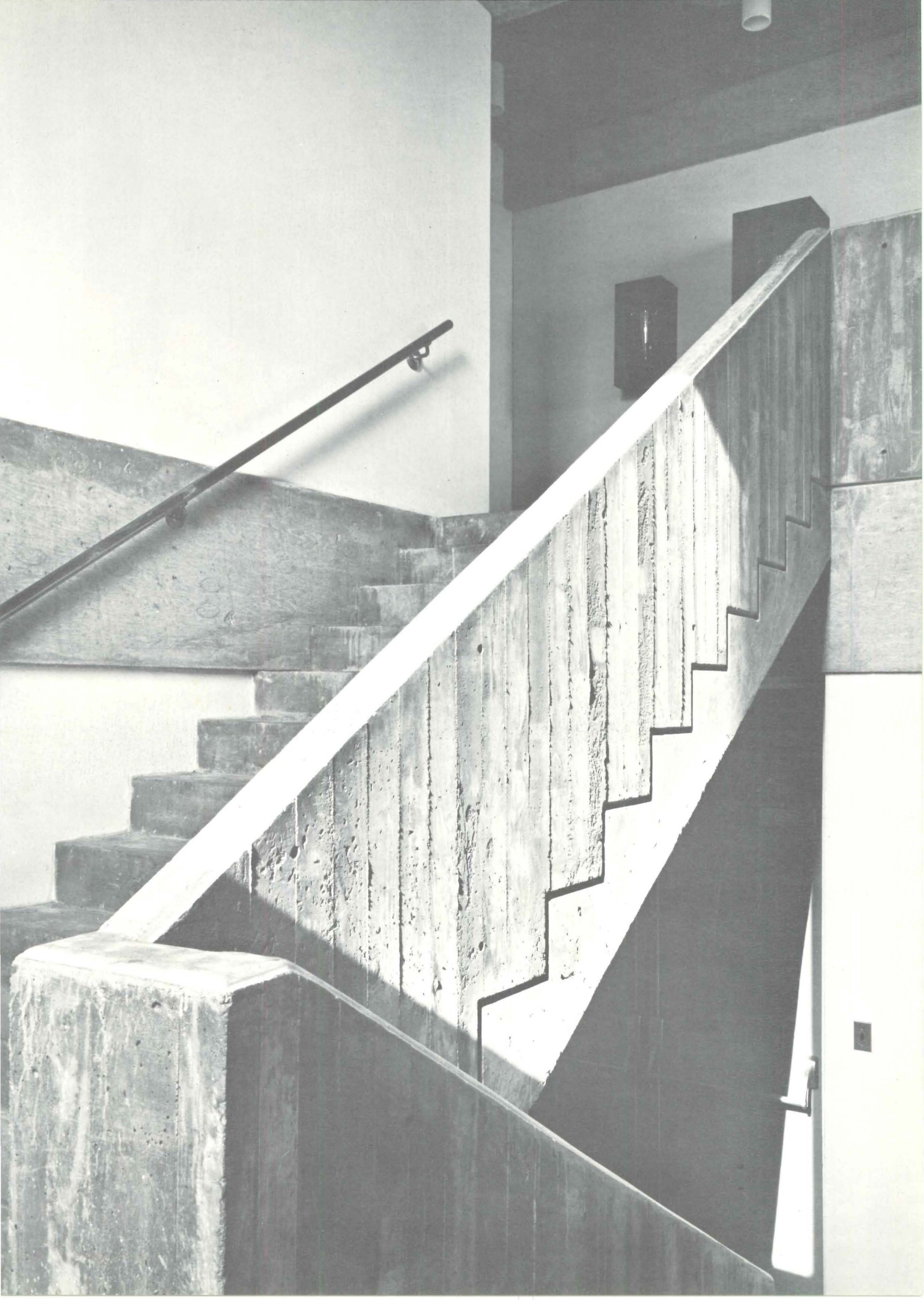
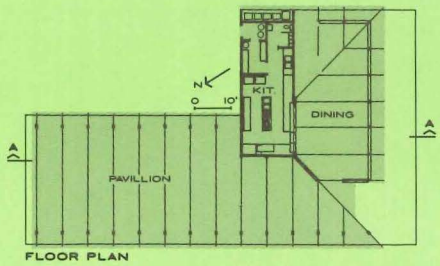


IT'S ALL ROOF

PAVILION AND SNACK BAR ADDITIONS TO THE BEACHCOMBER SWIMMING CLUB, *Center Square, Pennsylvania.* ***Architects:*** *Schlesinger & Vreeland.* ***Site:*** *A private swimming club on 10 acres of partially wooded, partially open countryside 25 miles outside of Philadelphia. Addition was to be placed in an open field adjacent to pool and bathhouse complex.* ***Program:*** *Building to house a snack bar and open pavilion.* ***Structural System:*** *Wood frame construction, trussed roof.* ***Materials:*** *Wood used throughout, with steel connectors in truss. Cedar shingles and diagonal wood siding are left to weather naturally. Column trusses, wood trim and door frames stained dark. Floor is poured concrete slab on grade.* ***Cost:*** *$26,615; $5.82 per sq ft.* ***Consultants:*** *Seymour W. Greenberg, Structural; Vinokur and Pace, Mechanical.* ***Photography:*** *Rollin R. La France.*

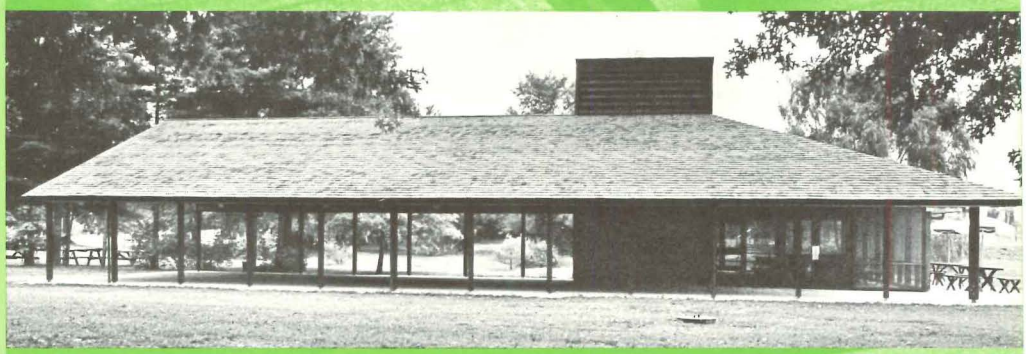
The addition to the Beachcomber Swimming Club is all roof. This solid, airy little building takes its form from a single truss construction that covers snack bar and open-air pavilion. It looks simple, is simple, but the basic framework is artfully manipulated to produce a variety of effects: The roof slants like a shed over the kitchen, is hipped over the snack bar, and gabled with a clerestory over the pavilion. The different interior functions

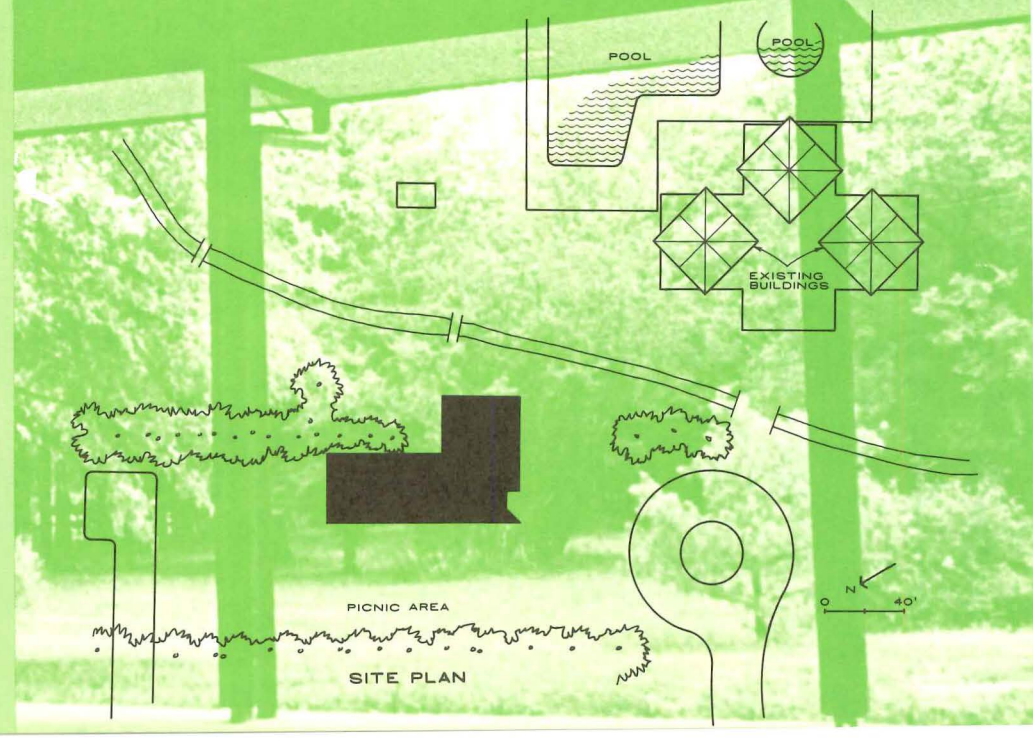


FLOOR PLAN

are clearly articulated, each area has a particular slant to it, each elevation looks different, yet the whole hangs together surprisingly well. The variations in the roof forms serve functional as well as visual purposes: The highest point in the shed, for instance, is over the stove and provides an exhaust point for the heat from the kitchen below. It also creates a visual climax at the crux of the L-shaped plan. The open clerestory in the pavilion provides some pleasant top lighting for what would otherwise be a dark armpit in the roof.

The truss construction was simple to erect and economical: Standard parts are cut in the mill, the truss is assembled on the ground and hoisted into place. The columns are composites of 2 x 8's which





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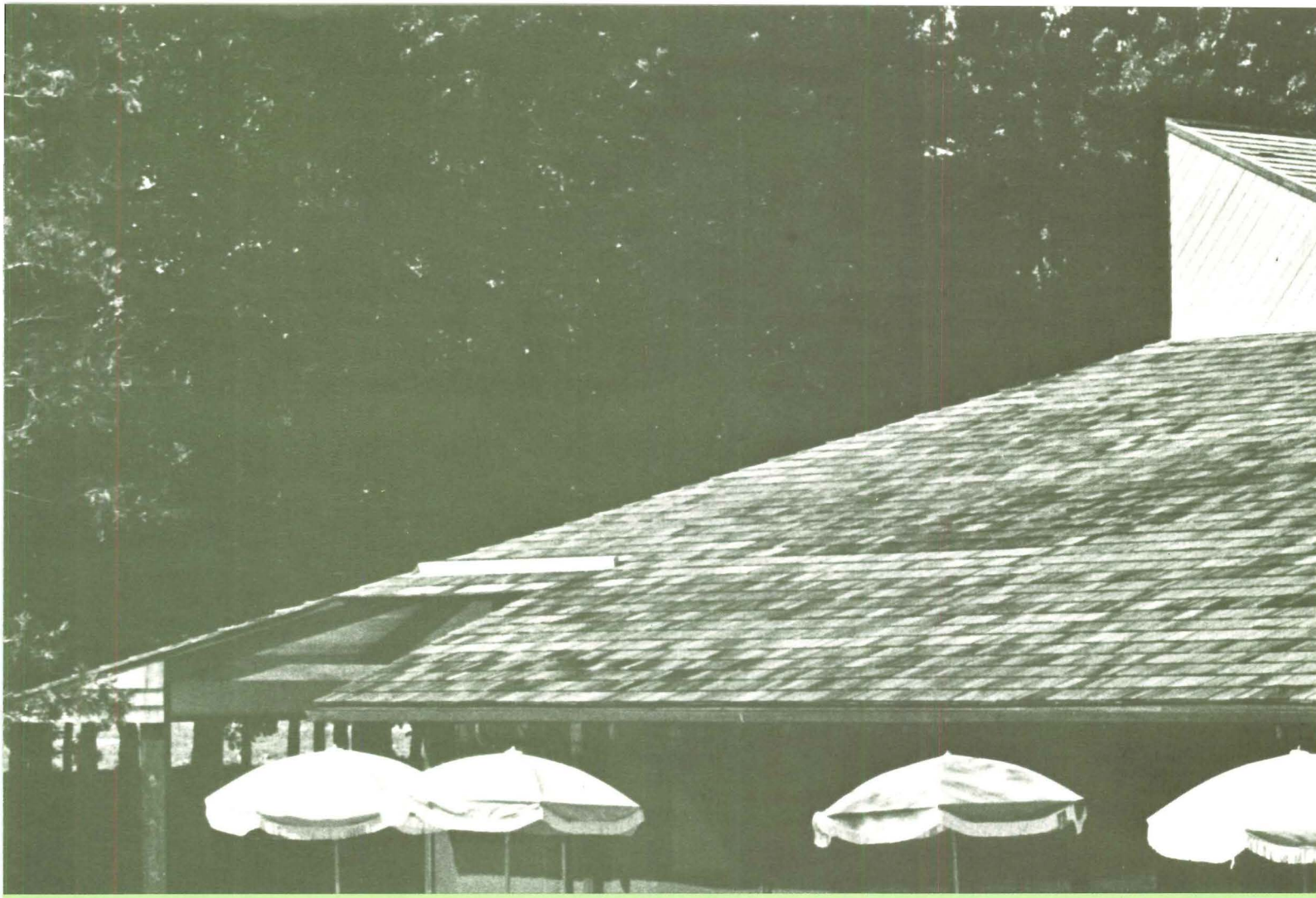
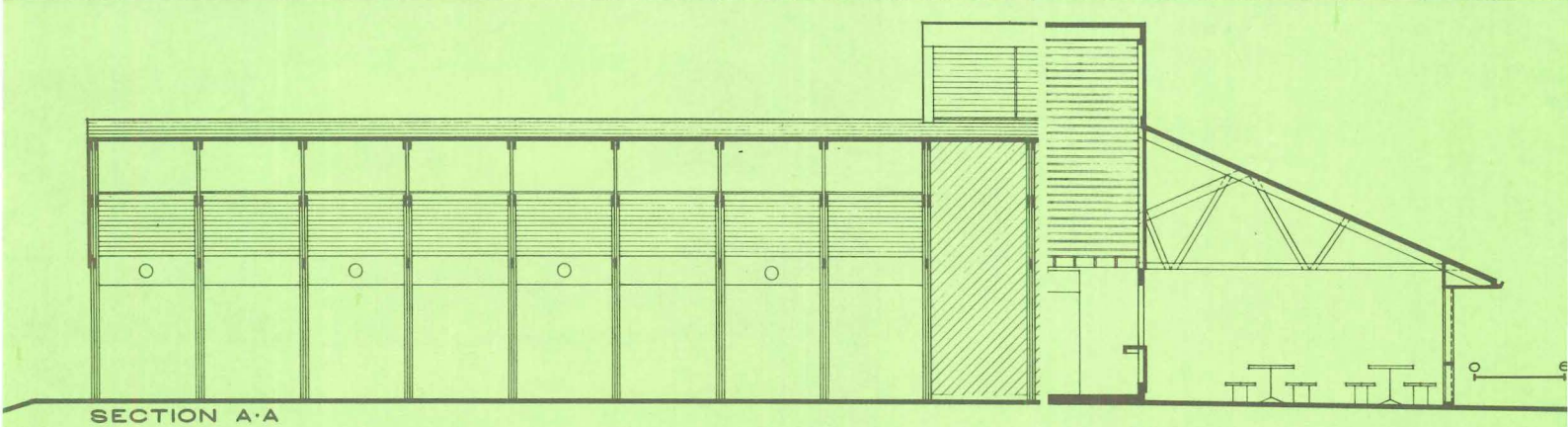
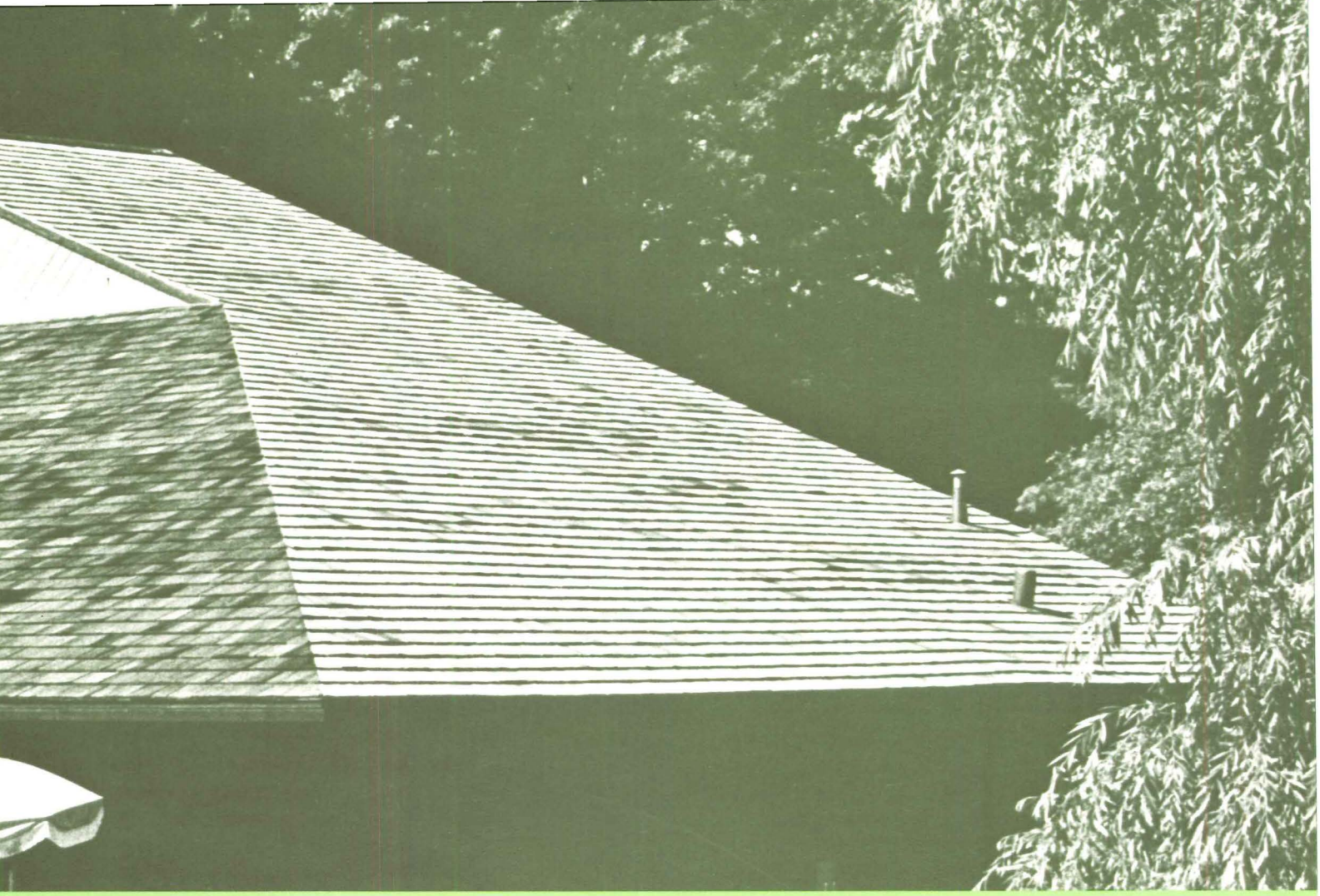




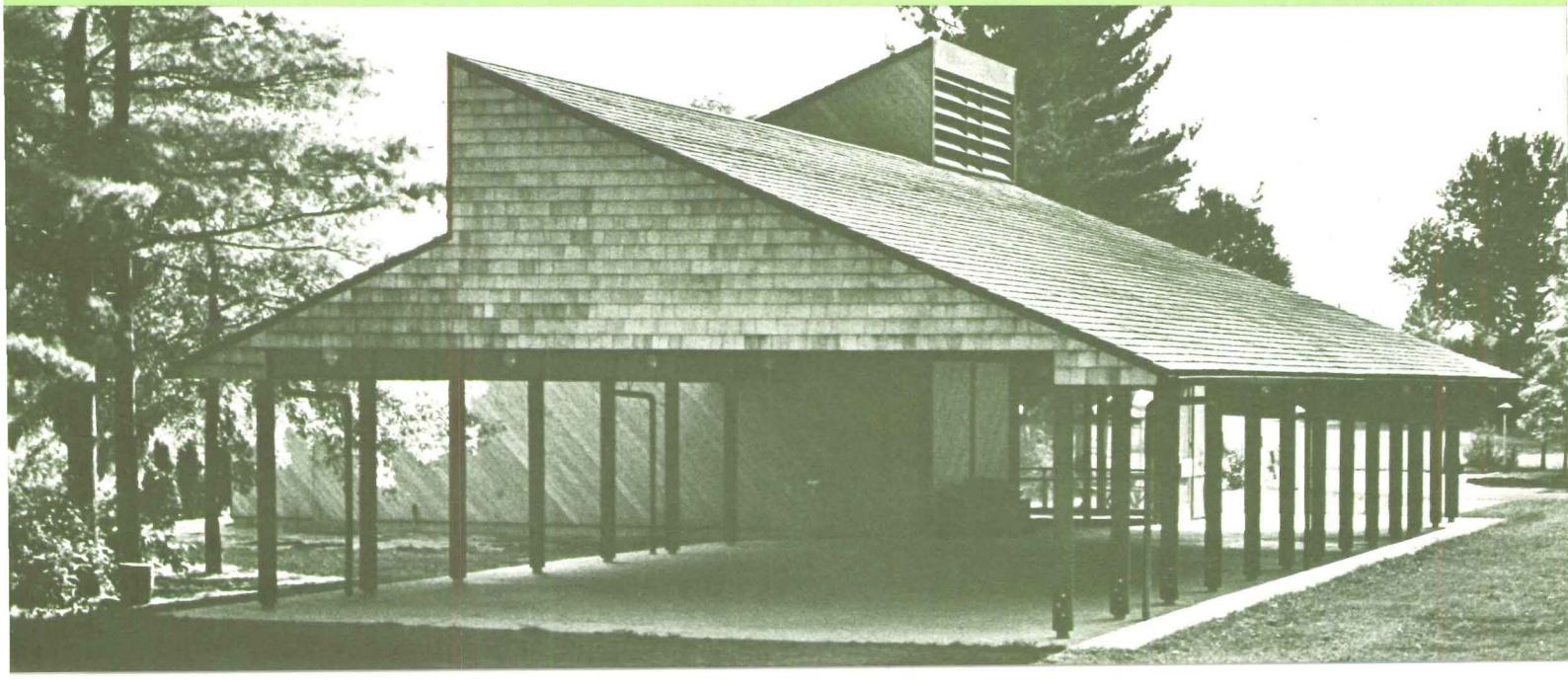
SECTION A·A



conveniently seat the truss members at the top and permit the flat steel pintle to be interleafed and bolted through at the bottom. The juncture of truss and column is stiffened by a triangular box of plywood that runs along the edge of the roof. This box provides a convenient chase for the wiring and mounting surface for the pavilion lights.

The over-all shape of the building grew out of the program requirements and the site. Since the structure was to house two distinct functions—pavilion and snack bar —with two different characteristics—open and closed—the architects expressed the two elements in an L-shaped structure. On the short side of the L is the eating area; on the long side, the open pavilion. The two share a common entrance cut out at the corner. Since the building was to be located in a field used for picnicking and the owner wanted to preserve as much space as possible, the pavilion was placed back against a line of trees, and the short side with the snack bar projects through the trees to the borders of the creek and swimming pool nearby. As a result, the structure fits snuggly into the landscape.

The clients were pleased: The structure fulfilled their demands of utility, blended well with the site, and was handsome to boot. The building won three awards, two from the Philadelphia Chapter of the AIA, and one from the Pennsylvania Society of Architects. It would be hard to be more "in" in Pennsylvania.



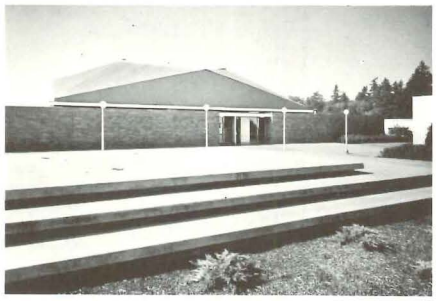
RETURNING NATURE TO THE INDOOR POOL

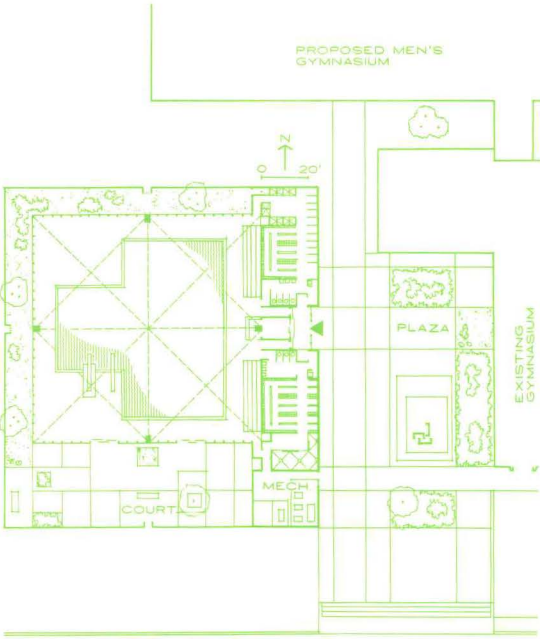
SWIMMING POOL BUILDING, *Pacific University, Tacoma, Washington.* ***Architect:*** *Robert Billsbrough Price.* ***Site:*** *Within a complex of athletics buildings; an existing gymnasium to the east and a new proposed field house to the north.* ***Program:*** *New enclosed swimming pool for intercollegiate as well as recreational use by student body of 2000.* ***Structural System:*** *Wood framed roof of laminated wood beams and purlins, with treated wood roof decking.* ***Mechanical System:*** *Heating: a perimeter system bathes all glass walls with curtain of hot air converted from electric hot water boilers.* ***Major Materials:*** *Glu-lam beams and columns, brick and glass walls, floors are concrete slab with nonslip ceramic and quarry tile finish.* ***Cost:*** *$232,929, including court, patio, pool equipment, site work, and P.A. system.* ***Consultants:*** *Whitacre Engineers, Inc., Structural; Clark M. Davis & Associates, Mechanical.* ***Photographer:*** *Morley Baer.*

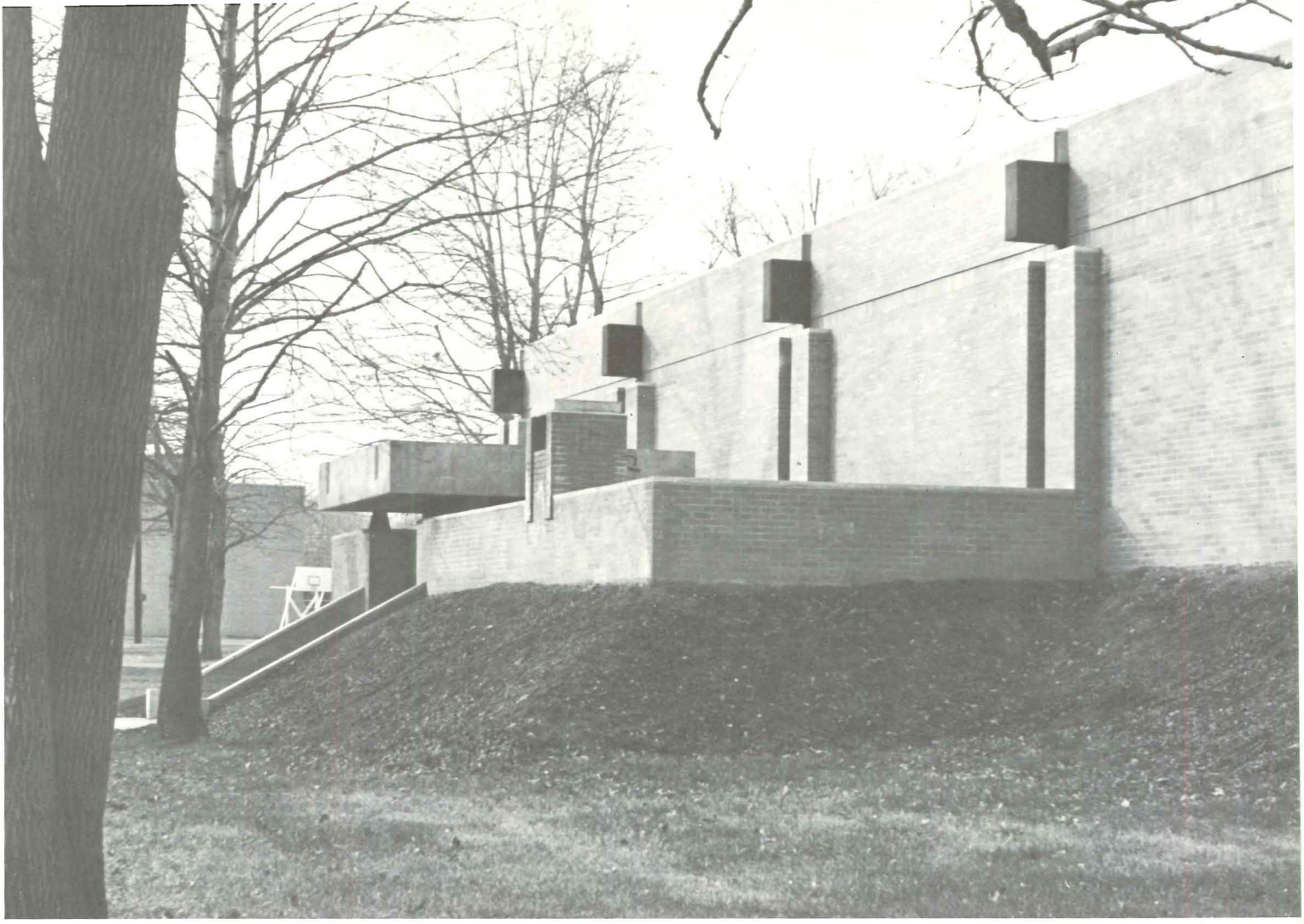
The Pacific Northwest has shivery weather for outdoor swimming but here is one architect who has tried to make the indoor sport seem at least as good as the natural thing. In designing the new pool for Pacific Lutheran University, Robert Price wrapped a brick wall around a glass-enclosed pool, planted shrubbery in the outdoor space, and created a sheltered sun-bathing area to the south. The interior is made as simple as possible with a rectilinear, T-shaped pool (no kidneys for the Lutherans) with separate sections for diving and swimming. To erect as simple a roof structure as possible for the 100-sq-ft pool area, the architect placed columns at the midpoint of each side to support the roof beams. The roof rises to a height of 30 ft over the diving area. The pairs of beams over the middle of the pool have air exhaust slits between the two members. A fan on the roof draws out the air, which rises naturally (not forced) from the outlets along the peripheral glass wall.

All facilities—showers, toilet, and mechanical equipment room—are located on the east side, wrapped up in a solid brick wall. The building has been sited to fit in with an existing gymnasium and a proposed gymnasium to the north. A plaza connects the three structures.

There is a disturbing dichotomy of effect between the inside and outside of the building. The interior appears strong and well articulated; the exterior elements are reduced to diminutive shopping-center type decorations; tiny lamps, broken-up patches of landscaping, a little bit of gravel here, a square of deck there, a shrub in a tub. Although the roof was lacking its final coat of color and aggregate at the time it was photographed, it still will have none of the solidity of the interior; it is a bland plywood cover. It is regrettable that the outside could not have been handled as boldly as the inside, that the roof could not have been strong and the garden areas less artificial—particularly since it was the intention of the architect to make an indoor swimming pool have as many natural attributes as possible.







IF YOU CAN'T BURY IT, BERM IT

SWIMMING POOL BUILDING. *New York Military Academy, Cornwall-on-Hudson, New York.* ***Architect:*** *Gary Lindstrom.* ***Site:*** *Adjacent to gymnasium designed by same firm.* ***Program:*** *A building to house an Olympic-size swimming pool with bleachers, lockers, and toilet facilities. Structure was to be linked to the older gymnasium.* ***Structural System:*** *Steel frame, precast concrete deck, brick and block cavity walls.* ***Major Materials:*** *Brick, concrete block.* ***Mechanical System:*** *Combined heating system of hot water finned tube radiation and forced warm air.* ***Cost:*** *$206,000, including architect's fees, and pool.* ***Consultants:*** *Isidore Shiffman, Mechanical; Gerald Spiegel, Structural.* ***Photography:*** *Gary E. Lindstrom.*

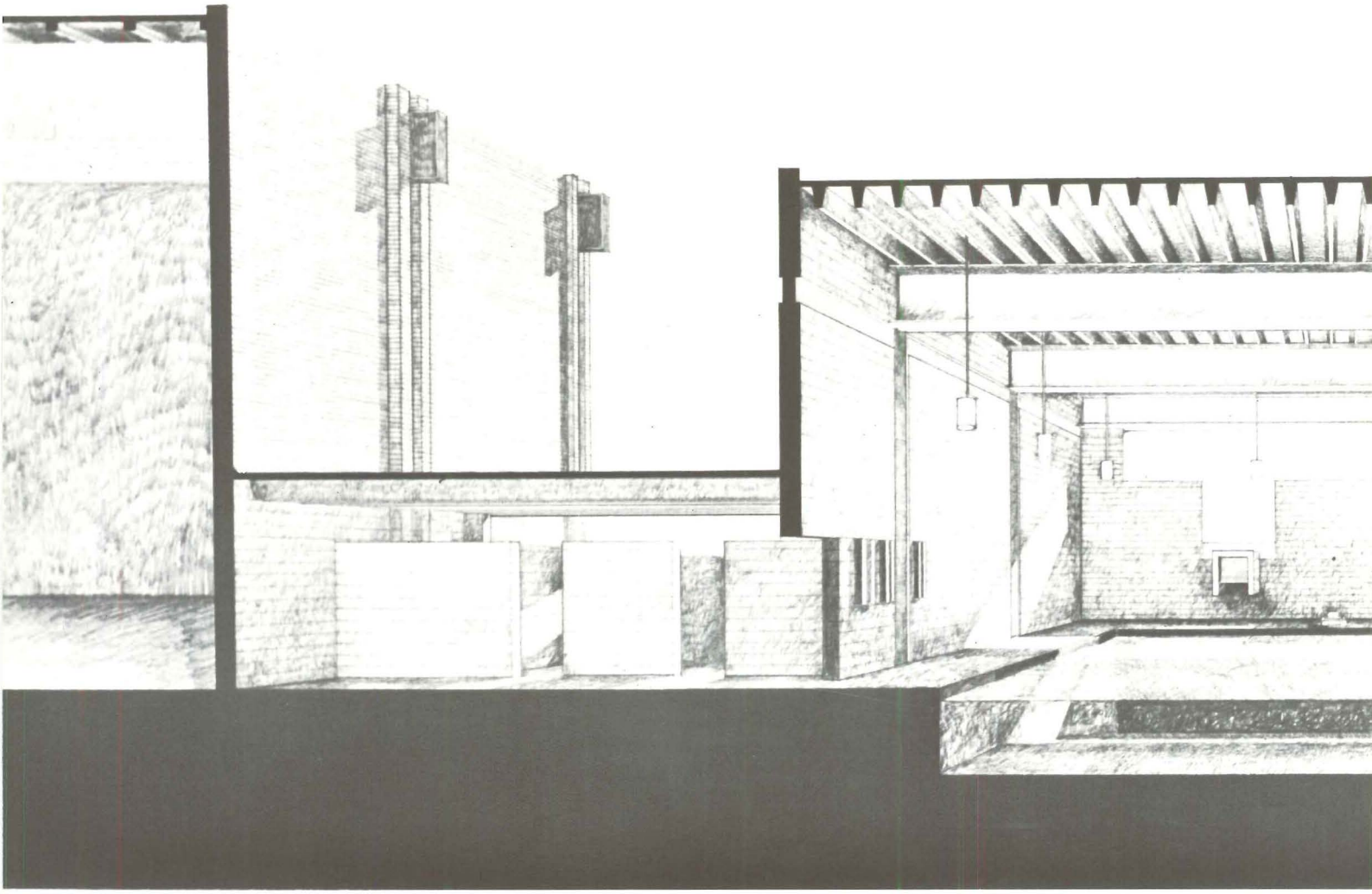
Squatting solidly behind an embankment of earth, this swimming pool building looks for all the world like a dignified 20th-Century fort. The imagery is not entirely inappropriate for a military academy campus and a school that takes sports deadly seriously.

But the fort idea is also very practical. The 6′-8″-high berm surrounding the building is the dumping ground for the 635 cu yds of fill excavated from the pool. Off-site trucking is eliminated and further savings resulted by eliminating facing brick along the bottom of the exterior wall.

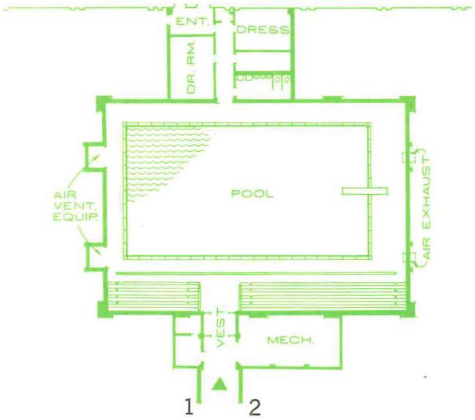
Finagling with berm-and-fort, according to Lindstrom, was not only a matter of savings, but also of aesthetics. The new building had to fit in with the surrounding structures, could not overpower them, but had to house an Olympic-size pool and be high enough to meet clearance requirements above the diving area. If treated like a conventional structure, it would have appeared awkward—long, narrow, and high—and seemed large in comparison to the surrounding buildings. The architect wanted it to look low but monumental. The normal, logical thing to do was to sink it. However, since the soil turned out to have good load-bearing qualities, the more practical solution was to put footings on undisturbed soil 1 ft below existing grade and—berm it. As a result, excavating expenses are reduced and the building sits almost on grade but appears massive, low, and at the same time monumental.

On the interior, the main space is 92′ x 64′ x 22′. It contains the swimming pool and bleachers and is linked to the existing gymnasium by a low-roofed unit containing lockers and toilet facilities. The entrance wing, which flanks the pool on the east side, faces the main campus and houses the mechanical facilities.

The building is heated by a combined system of hot water finned tube radiation and forced warm air. Heating and ventilating units are located in small rooms at the south end of the building, which open up directly into the room, thereby eliminating the need for ducts. Exhaust fans are housed at the opposite end. The flow of dry tempered air across the pool surface prevents excessive moisture build-up in the room. Since the architects wanted to get as much light in the building as possible without increasing the



solar gain (and causing hot-house ventilation problems), he placed all the windows on the south and north ends of the structure. The level of lighting in the interior is very low and the major sources of artificial light come from underwater locations, dramatically accentuating the pool area. The interior is gaily finished, the concrete block is spray with off-white epoxy paint, the wall in front of the bleachers is bright blue, and the shower room doors are orange.



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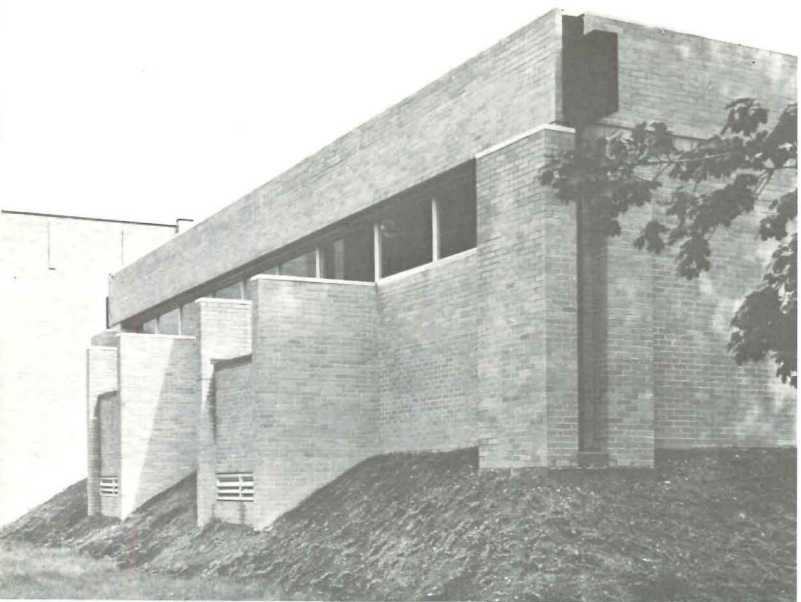
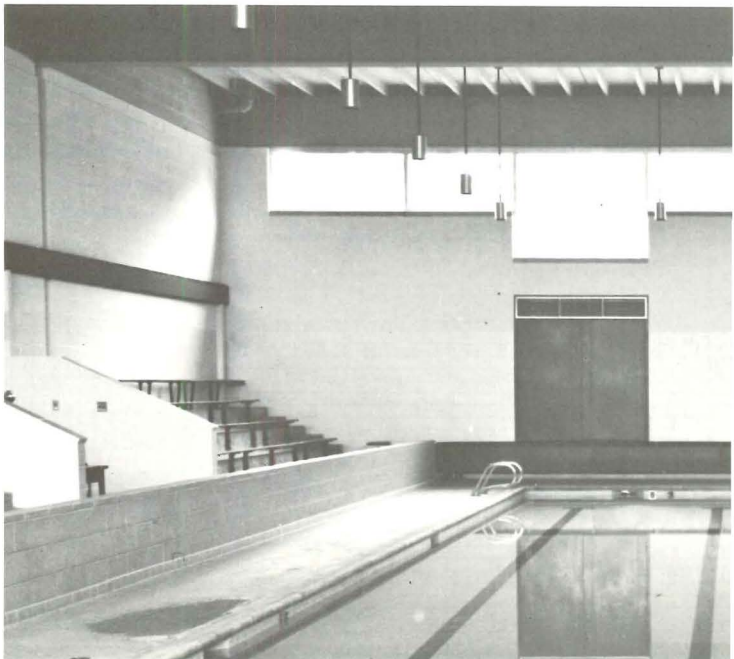
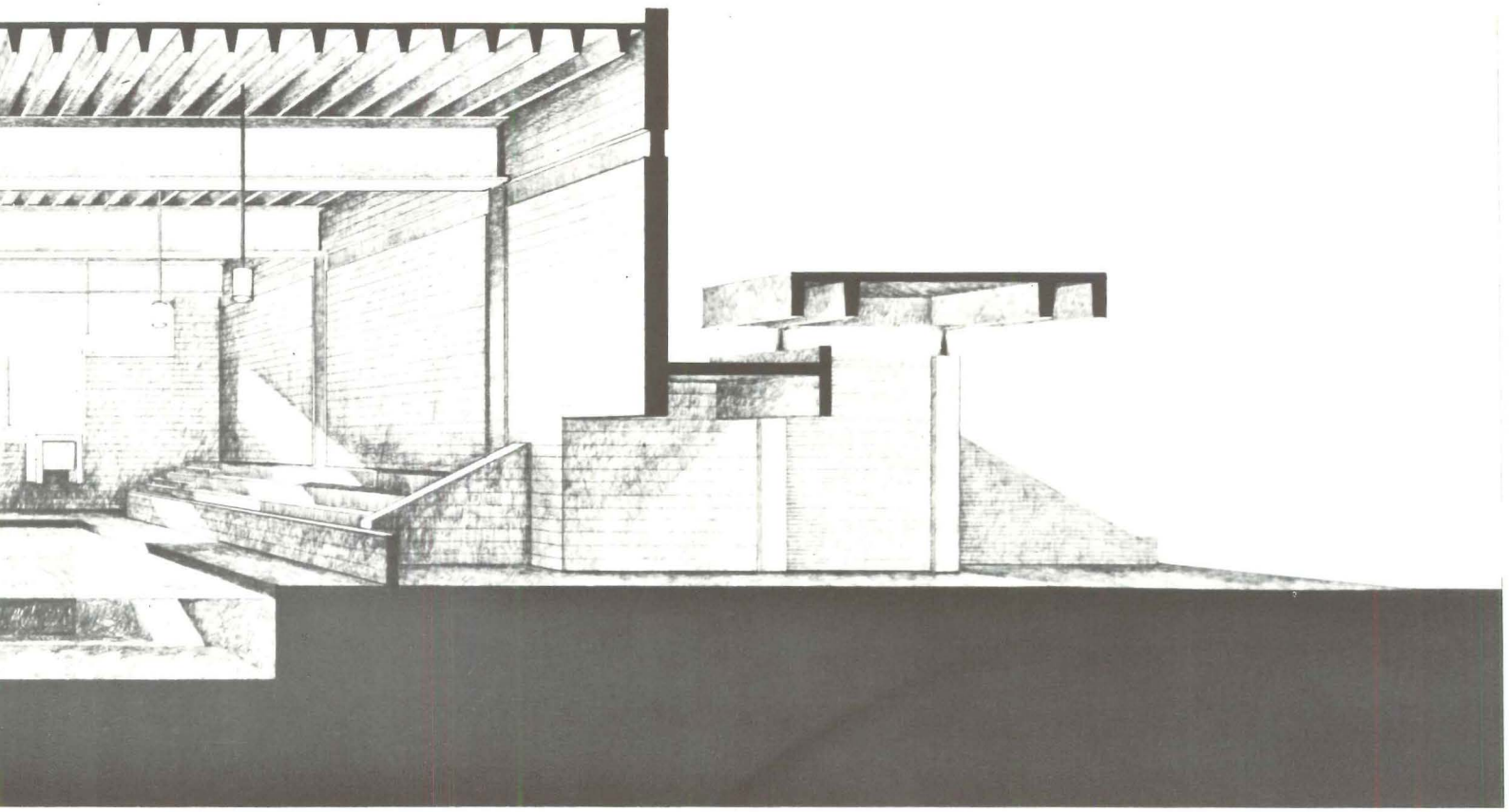
In the preliminary design stage, prestressed concrete beams and masonry bearing walls were considered because of the good soil foundation. However, because of the costs and the difficulties involved in sequencing this type of construction, a steel frame with precast concrete deck, brick and block cavity walls was chosen instead. The structure is clearly articulated on the exterior, creating a strong, fortress-like effect. The columns—exposed—are flanked by piers



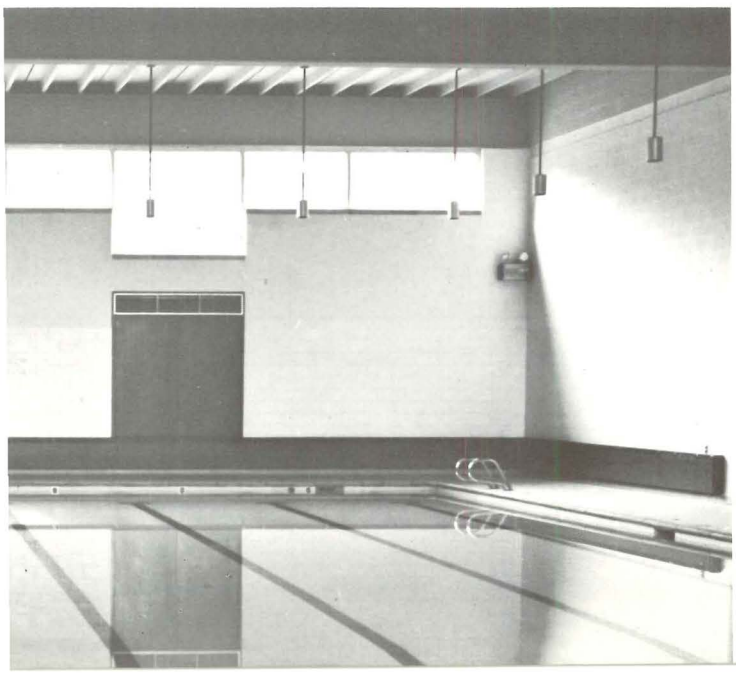


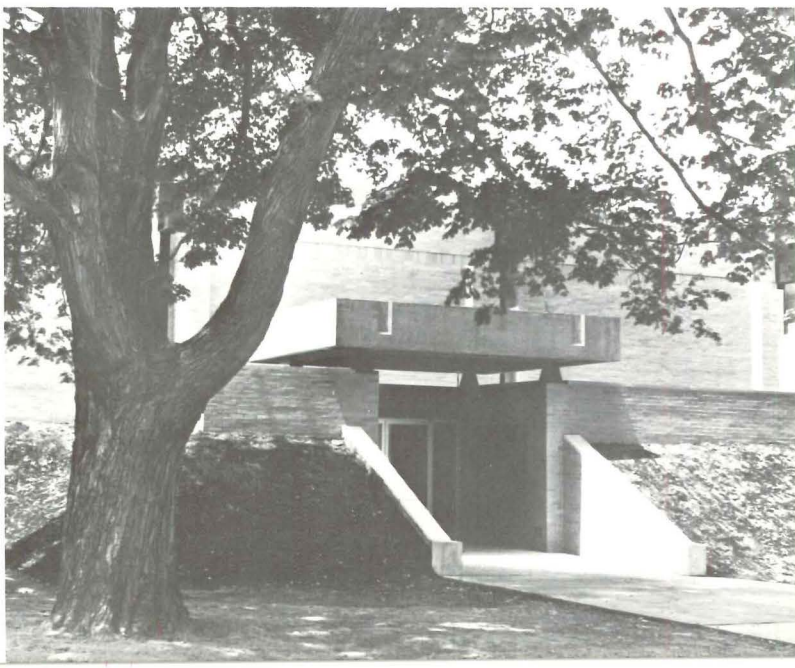


that support the infilling walls. The 33 beams (23′-6″ on center) span the 64 ft interior space and project on the exterior. The exposed beam ends are capped with ⅜ in. plates and bolted to the column.

The facing of the building is buff-colored brick with cast stone trim. Exposed concrete columns are painted black. It is a solid, monumental structure that succeeds, as the architect had hoped, in being forceful and militant without resorting to the more traditional crenelated fantasies of most academies. 'Tis a noble berm and fort.

(1) *Heating and ventilating units occupy two projecting sections of the south elevation.* ***(2)*** *Interior walls are double glazed, with high-level windows framed in aluminum deflection channels. Larger areas of glass extend down into the protruding heating, ventilating, and exhaust fan housings.* ***(3)*** *Cast-in-place concrete canopy, raised on steel supports, shelters entrance and breaks the line of the earth berm surrounding the building.*





CLASSES AT MIDSTREAM

School project limited by budget and stream traversing site has both gaps bridged by architectural ingenuity.

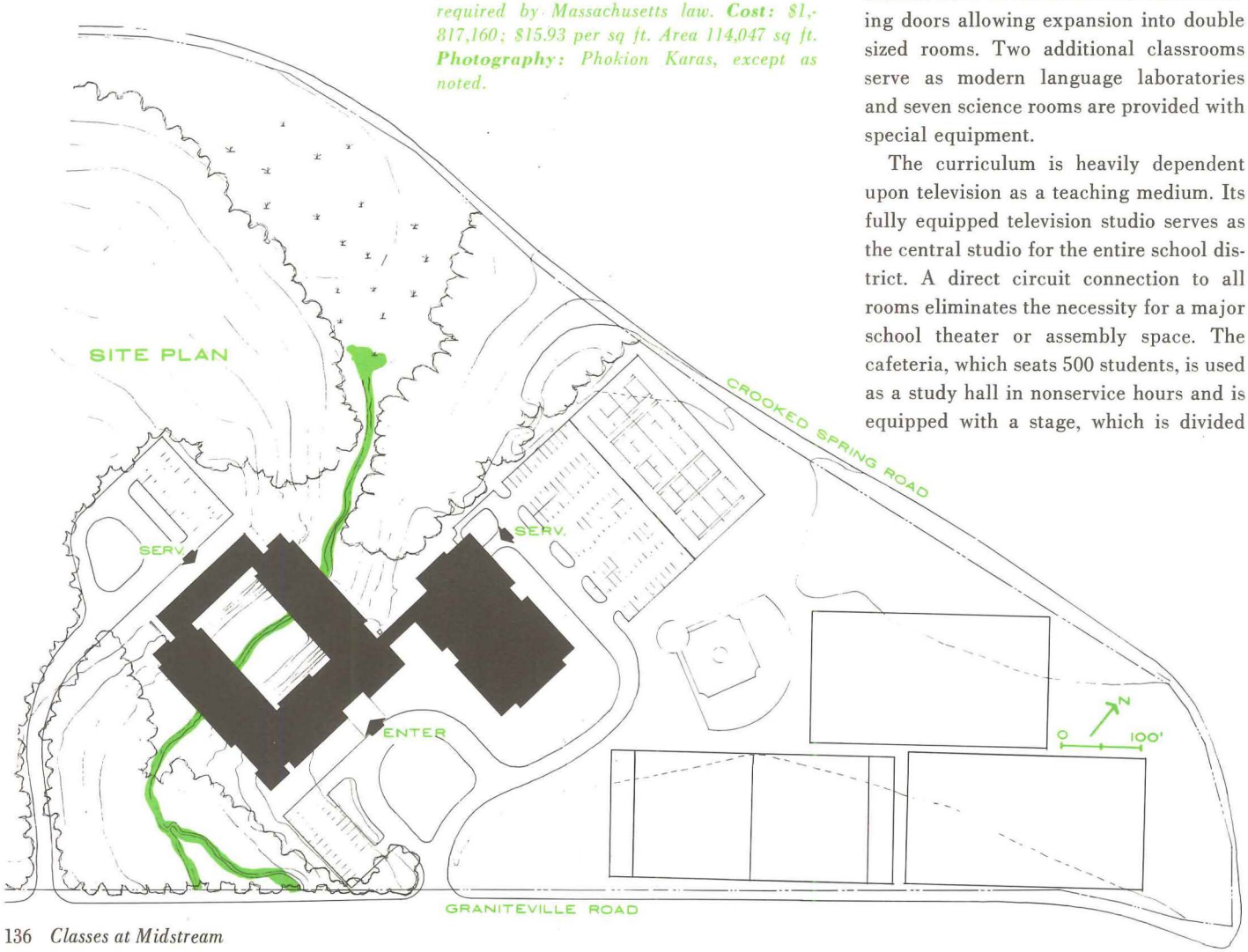
CHELMSFORD JUNIOR HIGH SCHOOL, *Chelmsford, Massachusetts.* ***Architect:*** *The Architects Collaborative: Principal in Charge, Louis A. McMillen; Job Captain, James E. Burlage.* ***Site:*** *Triangular irregular site bordered by roads on two sides meeting at lower corner (see site plan). School classroom building bridges stream, with major portion of original site and planting undisturbed.* ***Program:*** *Public school for 1200 pupils serving a rapidly expanding suburban community north of Boston. Facilities to be economic and flexible, utilizing new instructional methods, equipment, and aids, including team teaching, closed-circuit television in each classroom, and extensive use of programmed materials and electronic language machines. The school T.V. studio to serve as the central studio for the entire school district.* ***Structural System:*** *Reinforced concrete frame and slab with specially designed long pan system. Precast tees for cafeteria and auditorium roofing. Cavity wall construction.* ***Major Materials:*** *Exterior: exposed concrete columns, beams and slabs, pumice block painted and brown brick. Vinyl asbestos tile floor covering with red oak millwork.* ***Mechanical System:*** *Heating only, with provision for future cooling of administrative suite and T.V. studio. Hot water mechanical system in the academic wing, with steam in the cafeteria. Rooms individually ducted, as required by Massachusetts law.* ***Cost:*** *$1,817,160; $15.93 per sq ft. Area 114,047 sq ft.* ***Photography:*** *Phokion Karas, except as noted.*

The Chelmsford School was designed to limits imposed by site, program, and budget. The architects had an irregular parcel marred by a gully and stream running through a major portion of the site. The program required flat land for playing fields and parking facilities, and the budget ruled out extensive site work. They resolved the problem of spanning the gap between site and budget by bridging the school over the rivulet. The stream was channeled and enclosed on four sides and the central area attractively landscaped. At a modest price, the Chelmsford School is one of the most attractive in the country by a dam site.

The design of the school itself matches in detail the architects' ingenuity for getting the best out of what was originally considered the worst of the site. The plan allows maximum enjoyment of the vistas with a minimum of corridor space. The noisy and quiet areas are well isolated in two buildings and the air conditioning and lighting are sensibly integrated into the structure.

The school is designed for 1200 pupils. It has 25 classrooms used as homerooms, with the students traveling from these to classes. Four of the homerooms have folding doors allowing expansion into double sized rooms. Two additional classrooms serve as modern language laboratories and seven science rooms are provided with special equipment.

The curriculum is heavily dependent upon television as a teaching medium. Its fully equipped television studio serves as the central studio for the entire school district. A direct circuit connection to all rooms eliminates the necessity for a major school theater or assembly space. The cafeteria, which seats 500 students, is used as a study hall in nonservice hours and is equipped with a stage, which is divided



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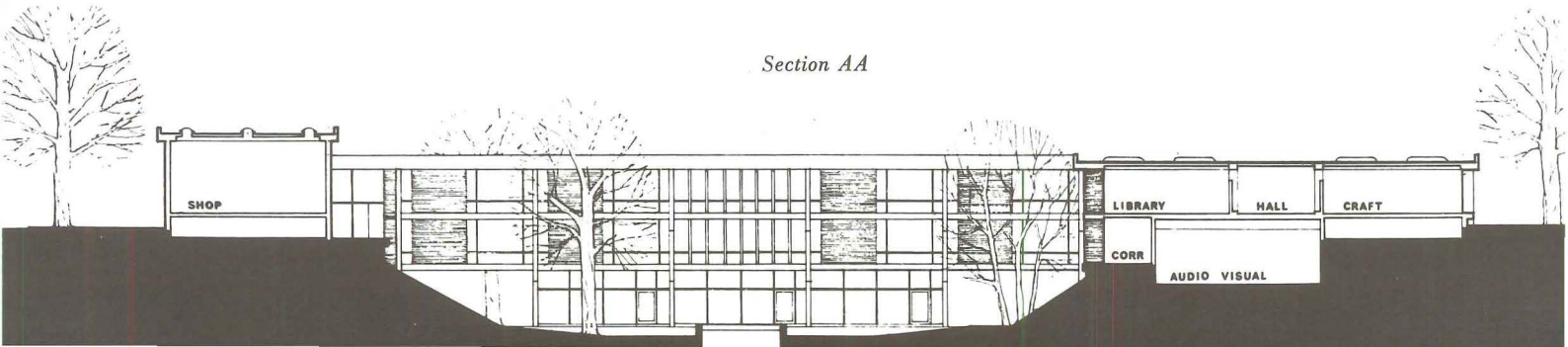

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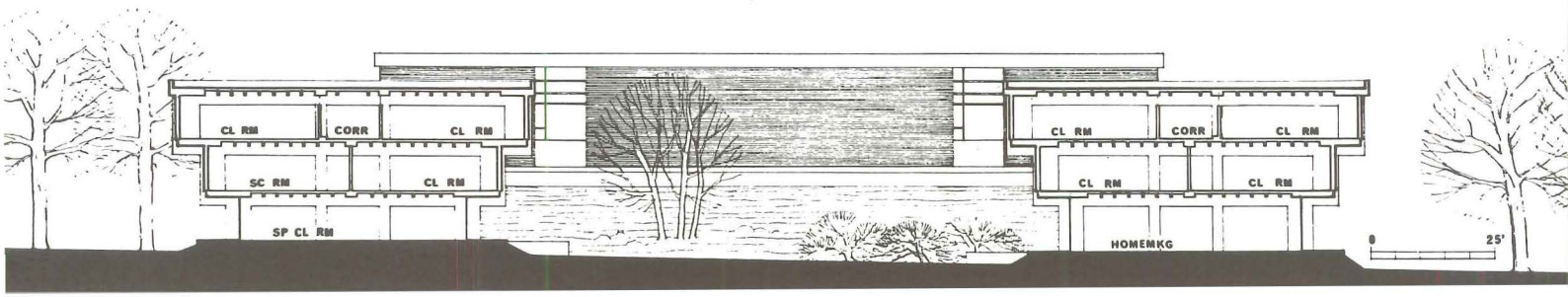
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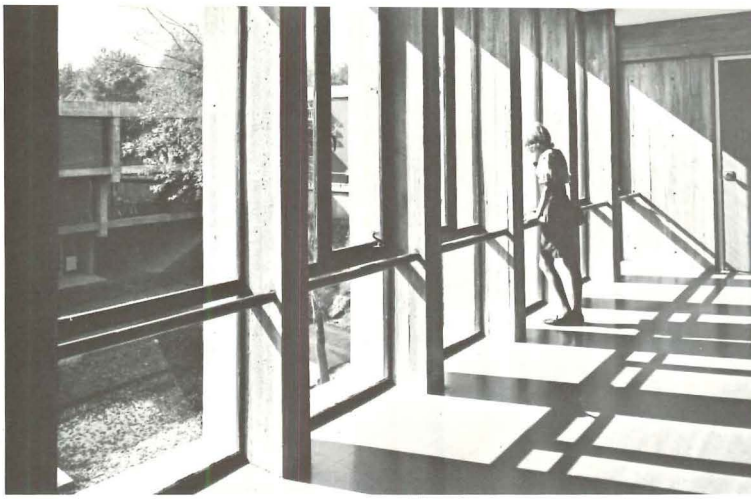


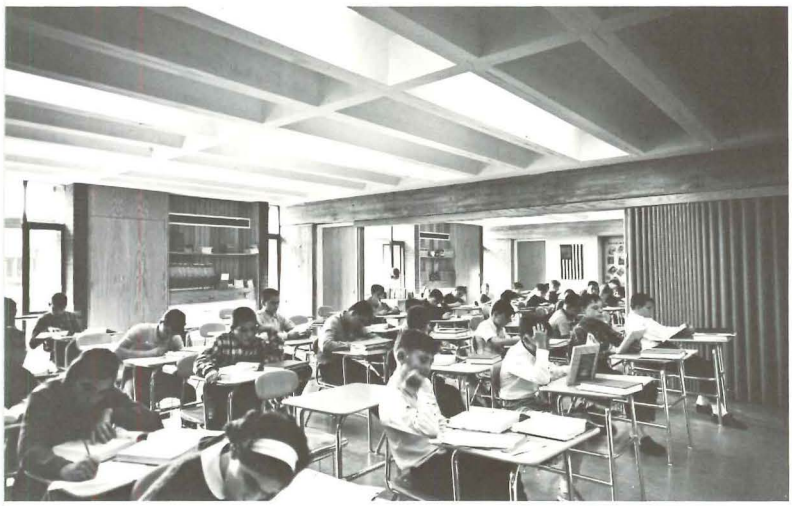


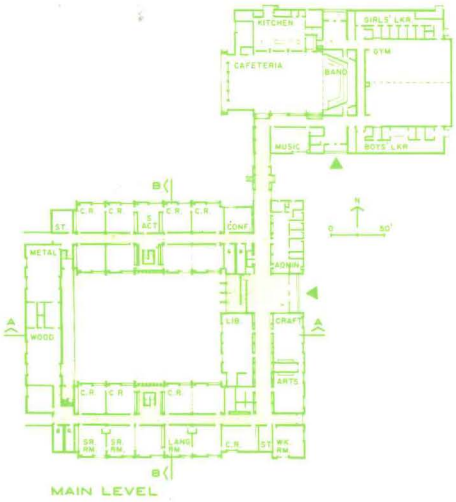
PHOTO: LOUIS REENS

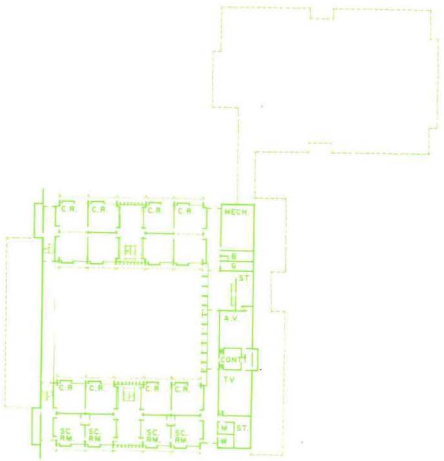
from the cafeteria by a coil-spring wall, and the backstage is used for a band room. A separate entrance allows communal use of this building.

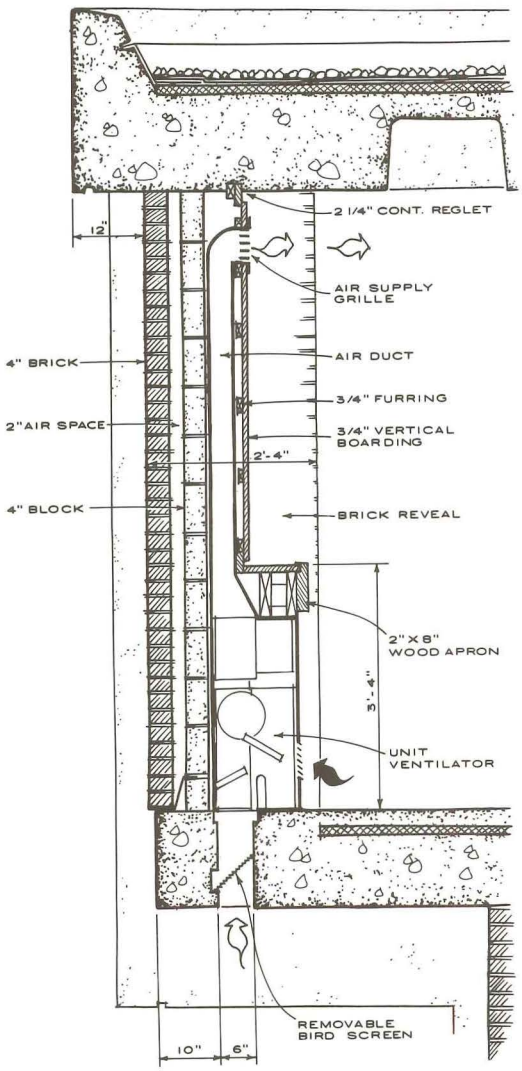
The band room on the backstage seems an ideal use of an otherwise infrequently used space but one wonders just how effective the coil-spring wall will be in retarding sound at band level.

The school was designed for predominantly vertical traffic. However, corridors can be reached without crossing through any of the classrooms, and general use allows any point within the building to be reached without going outside. The exterior routes were planned as auxiliaries for pleasant weather. Careful scheduling of classes is anticipated and would seem a necessity in this plan.

This observer thought that the form of the school was quite successful, particularly the cantilevered sections spanning the stream. The successive cantilevers effectively shade the windows of the floor below, making window covering unnecessary. They give the feeling of being perched on a ledge over the stream and landscaped garden. However, it seems a shame that classroom seating was oriented toward the interior walls, which put the students' backs to the landscape. One of the most pleasant aspects of the design is that, in the increased impersonalization of teaching, the student is exposed to this humanizing natural environment designed as part of the school.







WALL SECTION AT UNIT VENTILATOR

The architects worked the details to their advantage, as they did the site. The central corridor is used for the air-conditioning ducts, which are exposed but carefully positioned. The soffit of the external cantilever is quite intelligently utilized for concealing the fresh-air intakes. The teachers' cabinets are used for the air treatment units, affording concealment and easy accessibility.

The long pans for the ceiling grid were designed by the architects and constructed from standard long pans with special ends. Burlage says that there was a certain amount of difficulty in keeping the ends flush and vertical, but in almost all instances he managed well. The pans were used for three pours. The edges got a little rough on the third pour, as can be seen in their joining in the ceiling joist soffits at the main level. Burlange would have preferred a quirk or feature strip at this point, but the budget would not permit this refinement.

Due to the difficulty of the site, the contractor asked for and was granted the option of pumping concrete. The concrete is well formed and up to design strength, so it seems a sensible decision all around.

The pan sizes worked well for lighting with both fluorescent and incandescent fixtures. An attractive feature of the design is the introduction of natural light through skylights in the pans. The skylights are repeated in the cafeteria and gymnasium by cutting the flanges of the precast T's in these areas.

The factors that were in reality responsible for this excellent and economic design were limitations of site and budget —with no limitations on the architects' imaginations. They managed to put up a very attractive school at a square foot price which, in the rest of the country, is producing boxes. They were simply smart enough to use the building to design the site.—FW

The Architect's Toughest Problem

There exists somewhere in time and space a detailed solution to almost every human dilemma. In the Second Century A.D., a book was written called Razin, *which contained an essay on how to win at horseraces, another on how to obtain a rich wife, and a third on how to make oneself invisible. In 1436, one Cennino d'Andrea Cennini, a Florentine, described in detail not only how to paint every known natural form, but also how to fabricate the brushes and grind the pigments. And he climaxed the book with an absorbing chapter on "How to Make a Plaster Cast of Your Own Person." In the 16th Century, a soldier-poet-scientist named de Bergerac listed nine sure ways of getting to the moon. And only last April, a New York attorney immeasurably broadened the horizon of everyman's capabilities with a work entitled,* So You're Going to Build an Ocean Liner!

Naturally, the building industry has been able to capitalize heavily on its built-in invitation to the weekend hobbyist and the basement craftsman, and other fields have been quick to follow the example—from beating the income-tax rap to learning the saxophone, from vocabulary improvement at home to self-taught Karate. The architectural profession, however, has been characteristically slow in developing this trend to advantage. The best we have to offer so far is a few uninspired brochures on "How To Select an Architect," in a pathetic effort to prove to the public that we exist at all. I have looked in vain for a work on one particular subject, which, if appropriately documented, would greatly benefit our entire profession. The article might be entitled "How to Select a Client." I am so confident of an appreciative audience (as well as an entourage of gifted company) that I have decided to write a brief treatise on this subject myself.

The proper selection of architectural clients requires a rare balance of intuition, psychology, and common or garden horse sense—not in that order, but in reverse.

Under the heading of common sense, there are three simple rules. First, in your appraisal of the visitor to whom you have granted audience, it is essential to determine whether or not he is well-endowed. Whether he is rich in intellect, wit, or merely in money, remember that he may decide at some point to share some of his wealth with you. On the other hand, if he is poor, he may want to share his poverty with you, and this desire will strongly influence your relationship. It is not mandatory to rule him out in either case; it is paramount, however, that his classification be established at the outset.

Secondly, you must determine whether or not he wants to build. If he does, proceed immediately to rule three. If he does not, and if he has responded negatively to question one, the going is likely to be difficult, and it may be wise to cull him out as a prospect. If he is well off, however, all that is needed is the time and ingenuity to cajole him (or his wife) into a constructive frame of mind. An extension to his plant, a pavilion in his garden, a small villa on the Costa Brava are a few plums you might dangle in front of his quivering nostrils. But those are details.

The third rule has a personal angle. If you are still buoyed up by the hope that this may be the client to end all clients, ascertain whether he really wants you. There is always the possibility that he is planning to pick your experienced brains (gratis) in order to check up on his wife's cousin's son, who has recently tied up with a well-known package-dealer. Or he may want to retain you simply as a conversation-piece type of tax loss. In any case, avoid going too far until you are completely satisfied on this point.

Suppose now that your prospect has passed all preliminary tests with flying budgets. Comes the inevitable and difficult question of human psychology, and this introduces a strange paradox. The architect who is capable of dealing with the myriad aspects of client selection might be far better off to branch into the field of psychology per se, and abandon the practice architecture until he retires. The physician who dabbles in the arts, for example, is on far more solid ground than the architect who attempts to use the science of the mind to his professional advantage. Yet every Tom, Dick, and Harry in the architectural world, regardless of his private income or his design ability, must call up every available psychologic resource at the first encounter with a

new prospect. In fact, the "interview" is the moment when many instant decisions must be made, all bearing heavily on the final winnowing-out of selectees.

To illustrate the challenge of each moment, let us examine a few of the cases where the architect-cum-psychologist must constantly analyze his prospect. First, in the case of the client as an individual, does he have the right sense of humor? Does he laugh at your jokes as though to ingratiate himself, or is he genuinely affected by your wit? Or does he laugh at all? Does he smile at the mention of the fee? Or is he the first to bring it up? If so, in what context? Your instinctive reaction to these and many other subtle points will help you decide whether to continue to entertain him or to rise and hold out your hand, whether to embrace him wholeheartedly or to dismiss him with appropriate frigidity.

The intricacies of client psychology are compounded in the confrontation or architect and building committee; this is far more complex and entails a mastery of tactics not unlike a military campaign. First, there is the matter of the make-up of the committee as a whole. Has the town or corporation, in requesting this audience, put its best foot forward? Is the assembled group an honest representation of your client, or have the trouble-makers purposely stayed away from the first meeting? The architect must pierce through the polite sheen of social form and see beyond the exterior characteristics of the group and of each individual; his acceptance of the proffered commission is tacit acceptance of their society during the entire design and building period and must be based on quick and correct impressions. There is no middle ground; he must accept or reject the entire group, no matter how much he may be impressed by the sagacity of one of its more attractive female components.

Generally speaking, the same rules-of-thumb apply to committees who seek out your services as to individuals who request access to your fund of genius. Have they remained alert during the entire interview? Did they ask any questions that you had not anticipated? If they remain past the prescribed period, it is a good sign; and they deserve full consideration. Concentrate on the acknowledged leader of the group. If he has impressed you, it may be the start of a long and fruitful association, (if only to help him lay out an extension to his porch).

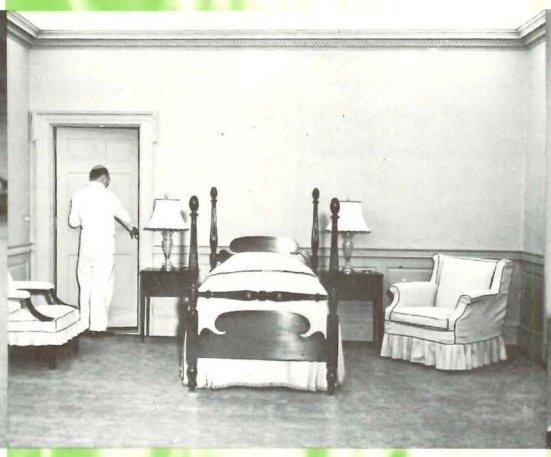
There are those who might suggest at this point that the final choice of a client should be made by assembling all the facts and impressions and feeding them into the impersonal maw of the computer. This may be the ideal procedure in some cases; yet, in a sense, it suggests a cowardly negation of personal responsibility. The client who has overcome the abstract hurdles, as well as the obvious, concrete obstacles, deserves more consideration than the soulless machine can offer. The possibility that he may be accepted as your client must rest on a more humane decision.

Interestingly enough, this delicate problem may resolve itself in a few brief words at the end of the session. Here, perhaps, is the greatest test of the architect's intuition. There comes a moment when you have made your visitor so much at home on the subject of your mutual venture that he leans back in his chair, fingertips touching, an ironic expression on his countenance, and says dreamily, "Now, the kind of building I want is . . ." At this point, the architect (depending on his work load) is legally and morally at liberty to write him off or to turn him over summarily to the mercies of a junior associate. The creative world is already far too cluttered with the work of patrons who, unwittingly or not, have tried to outguess their protégés.

But if your visitor, nervous with anticipation, leans forward on the edge of his chair and says, haltingly, "You're the architect; what do you think?" then seize the hem of his garment and follow him. If you are fortunate enough to be visited by one of this rare breed, never let him go. You may not see his like again.

The author is an architect practicing in Bridgeport, Connecticut.

By Robert H. Mutrux



HOSPITAL PATIENTS' ROOMS

Of all types of rooms, the hospital patient's room—lovingly called "the nursing unit"—is the most consistently ugly. Why?

According to some of the authorities, since the patient's room represents the largest capital expenditure and the largest daily operating cost in most hospitals, its design and construction price must be kept down. In addition, functions are considered unequivocally paramount. To most architects, the hospital is the supreme example of technology over taste, of the submission of pleasantness to practicality. For example, the patient's bed must first and foremost be facilely operable—primarily for the nurse. (Nurses and doctors are generally in a stronger position to voice their opinions to the hospital administration than patients are.) Then the floor and other surfaces must be easily cleanable and must not harbor germs. The result is stripped surfaces, devoid of imaginative form, devoid of textural interest, totally lacking any hint of the joy of life outside the hospital. Doctors seem to have everything going for them—even ugliness.

But the times may be changing. The medical profession shows signs of recognizing the psychological effects of the nursing unit on a patient. Symposiums on the subject have recently stirred up no small controversy.

Furniture manufacturers continue to blame hospital administrators, claiming that they insist on stripped, undesigned furniture so that there will be no crevasses in which germs can collect. But that does not obviate highly stylized economical design.

The current drive by many hospital furniture manufacturers for acceptance of their "new" Early American and French Provincial hospital furniture is clearly a contrary effort, one diametrically opposed to what the medical profession wants. It is an effort to create a style market for the latest hospital fashions. (Watch out, soon it may be a Louis Treize hospital room.) This sort of thing merely emphasizes the lack of serious market research by most of the manufacturers of hospital furniture (and there are only about a dozen firms in the field).

The designs themselves illustrate that none of these firms has spent sufficient sums to engage top-notch designers. And, as any architect who has specified special designs can tell, the volume of business in this area would financially support a campaign of design improvement. Office furniture catalogues show handsome, clean, economical units. Why not hospital furniture catalogues?

For the designer—lacking interesting forms, deprived of using textures—the only recourse is said to be color. And even on this much-discussed, joyous, living subject doctors have been generally restrictive. A review of the polemic on hospital room design is presented here in hopes of stimulating someone concerned with patients to be interested in the other half of life. What can architects and designers suggest? What can furniture designers do?—CRS

One hundred years ago, hospital buildings reflected the inadequacies of medical knowledge and technique. In most cases, they were converted warehouses, office buildings, or factories consisting of large, drab, germ-infested wards. Patients were the poor or those beyond help. The rich stayed home, where the chances of recovery were better.

Today, the hospital is a healing center, where patients from every walk of life come to be treated with hitherto unknown drugs, advanced surgical techniques, and specialized medical knowledge.

As a result of this rapid progress in medical science, design concepts for hospitals are also changing radically. Newest is having rooms designed with the patient in mind, as well as the hospital staff.

Large wards are disappearing. Typical floor plans now consist mainly of single and double rooms, and indications point to the single room as the basic unit of the future hospital.

Boone Powell, who is the administrator of Baylor Medical Center in Dallas, says, "Although large hospitals in low-income areas will include wards for some time, for most medium-size hospitals (200 to 400 beds), any room with over two patients may soon be passé. Furthermore, several new hospitals in our part of the country already devote half of their patient rooms to single units and almost the entire other half to two-bed units."

In the past, when private rooms were scarce, the costs were beyond the budget of many. Today, however, hospital insurance programs and the

Evolution of private hospital rooms is illustrated on the facing page: as background, personnel and beds from a children's ward circa 1916; in the middle, from left to right, a children's ward from 1926; the President's suite at Walter Reed Hospital around 1949; and another room from the 20's.

general rise of personal income have put private and semiprivate rooms within the reach of most people. And, given a choice, many people prefer the restful atomosphere of a single room to the noise and congestion of a two- or four-bed room or ward.

This is a subject of some controversy, however. Some authorities feel that only the educated and "upper class" patients seem to prefer private and semiprivate rooms. and that the less well-educated seem to prefer their misery in company.

The Advantages

Interestingly, the trend toward single and double rooms is improving hospital efficiency.

"Well designed and decorated hospitals are fast becoming economic necessities," says Owen Pinkerman, the director of the William Beaumont Hospital in Royal Oak, Michigan. The reason is that doctors and nurses can work faster in private, quiet, and pleasant patient rooms than in the distracting atmosphere of a ward.

"Industrial plants and offices," Owen Pinkerman points out, "have for many years been using design techniques such as noise and light control and color-coded aisles and machinery to improve personnel morale and efficiency. Now we've learned that similar techniques work in hospitals and that they also make recruiting of staff personnel easier and consequently lower turnover significantly."

From the patient's point of view also, the change is a welcome one. In addition, hospital administrators are finding that patients recover more quickly in pleasant surroundings and can therefore be discharged earlier.

Many hospitals are discovering that, while initial investment for attractive rooms is higher than for rooms with a sterile, institutional look, the total cost evens out over a five- to ten-year period because of maintenance savings.

As a consequence of the general direction to improve patient-room design, cell-like institutional furniture and décor show signs of becoming things of the past. But for the architect, it still leaves the challenge of incorporating improved interior design while adding as little room space as possible. For space, always at a premium in hospitals, is even more critical in the wardless building of today.

Design Factors

The following paragraphs attempt to analyze how each of the main architectural elements of a patient's unit—size, shape, walls, floors, ceilings, windows, furniture, and bathroom areas —can contribute to good design.

Size. To an extent perhaps greater than in any other type of building, the size of hospital rooms is dictated by functions.

One study that measures minimal distances is the Yale Index of hospital design efficiency, which might be thought to provide only restrictive limitations to hospital architects and interior designers. However, Connecticut architect Robert Lawrence has shown that the Yale Index can serve as a useful tool in convincing hospital authorities to permit improved room designs. He has, for example, extended one of the factors on travel distance from the nurses' station to the patient to include the distance from the bedroom door (where the Index factor stops) to the head of the bed (where the nurse actually stops). This kind of detailed investigation indicates the influence that function has on hospital room size.

Although a patient's room must be minimal in size to insure efficiency, there must be adequate room for housekeeping, attending the patient, and moving him in and out of bed. In addition, the room must obviously be large enough to accommodate a bathroom, furniture, and storage space for clothes and hospital equipment.

It is generally accepted that a single room should have approximately 180 sq ft, and a double room 240 sq ft. And architects unfamiliar with hospital work are advised to check state regulations for minimum allowable room sizes before designing a room with less space.

Shape. Rooms are usually deeper than they are wide in order to increase the number of rooms per corridor and to reduce the critical walking distance for nurses. Generally accepted dimensions today are 17′ x 11′ for a single room and 17′ x 14′ for a double room.

There are exceptions, however. Some hospitals want wider rooms, so beds can be placed against opposite dividing walls. This separation is thought to minimize cross infection, allow more privacy, and give each patient an equal view of the window.

In several hospitals, the width problem in single rooms has been solved by placing the bed against a short wall that extends from the dividing wall at a 45° angle. This technique reduces single-room width by 2 or 3 ft, yet still provides adequate maneuvering space on each side of the bed.

One scheme of the past several years to have received considerable attention in both architectural and medical circles is the five-sided bedroom created by Gordon Powers & Associates, Architects. Already employed in several institutions, the plan of the two-bed unit was devised to give its two occupants the advantages of privacy at semiprivate rates, and in addition, offers a pleasant seating area in a bay window away from room traffic. This plan permits both patients to have a view of the window even when the dividing partition is closed.

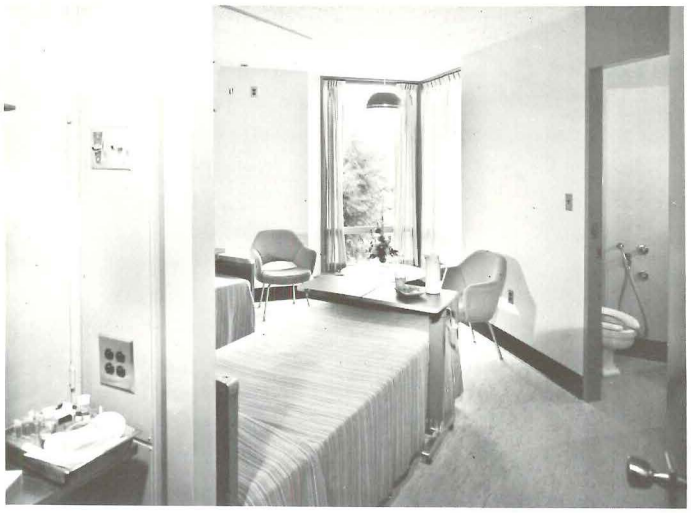


PHOTO: JOSEPH W. MOLITOR

Semiprivate room with bay window in The Point Pleasant Hospital, Point Pleasant, N.J., provides somewhat independent outlooks for both patients. Architect: Gordon Powers & Associates.

Walls: vinyl/beige/L. E. Carpenter & Co. **Floor:** vinyl asbestos tile/beige/Armstrong Cork Co. **Ceiling:** acoustical tile/white/Celotex Corp. **Beds, overbed tables:** plastic laminate/walnut; metal frames/St. Charles Mfg. Co. **Armchairs:** orange wool/metal legs/Knoll Assoc. **Pedestal tables:** white/Knoll. **Lighting:** pendant in bay/orange metal/Pescolite; over bed/turquoise and walnut plastic/Pacific Assoc. Lighting Co. **Cubicle curtain:** steel/beige/Modernfold Co. **Bedspreads & Draperies:** beige stripe/by hospital staff.

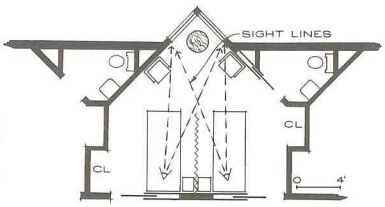


PHOTO: EZRA STOLLER ASSOCIATES

Four-patient room at New York University Medical Center. Architects: Skidmore, Owings & Merrill.

Walls: painted plaster/yellow behind bed, others white. **Floors:** vinyl asbestos tile/beige/Amtico. **Ceiling:** painted plaster/white. **Beds:** beige plastic laminate head and footboards/removable/The Simmons Company. **Overbed tables:** chrome base/beige plastic laminate top/Royal-metal Corp. **Bedside tables:** beige plastic laminate top/metal frame/Hard Mfg. Co. **Armchairs:** metal legs/yellow vinyl upholstery/Bright Chair Co. **Sidechairs:** white plastic shells/metal legs/orange vinyl seat pads/J. G. Furniture Co. **Overbed lighting:** plastic lens/white metal box/Eastern Lighting Co. **Cubicle curtains:** cotton/striped beige, greige, gray, white/Stapler Fabric, Inc. **Cubicle track:** Grant Pulley & Hardware Corp.

Critical in determining the shape of patient's rooms, of course, is the relative position of the nurses' station, and it now obtains that this factor, more than any other, predominantly influences the shape of both the individual room and the over-all hospital floor.

Walls. Of all the wall-covering materials, plaster and heavy-duty vinyl are the most popular in hospital use today. Fabrics and wood are avoided both because they are expensive to install and because they are subject to being marred by furniture that must be moved frequently. Plastic laminates have not found any wide acceptance on hospital walls primarily because of cost.

Glazed structural facing tile, which is used primarily in corridors, has many advantages that should make it popular in patients' rooms, but a comparatively small range of colors leads ceramic tile to be preferred.

Viterous spray enamel coatings, which are used in other hospital areas, could also be used more widely and efficiently elsewhere. None of these, however, is employed in the actual patients' rooms with any sensitivity or regularity. And no one seems to be interested in raw concrete in such an area.

Despite the fact that the durability and maintenance factors of the above-listed materials are superior to those of painted plaster, the minimal costs of the latter seem always to gain it the priority acceptance. Cleaning and spot touching-up are constant operations, however, and at those times the factor of infinite availability of colors can become less than an irresistible asset.

Vinyl coverings, which are almost half the cost of ceramic tiles (the most expensive of the hard surfacing materials), seem the best all-round compromise for the hospital room, and their popularity points to a consensus on this notion. However, they are not impervious to markings: ballpoint pen marks seem to fuse with the vinyl and become indelible. And so additional plastic coverings such as Tedlar are being generally accepted as necessary.

Wall decorations such as pictures, plaques, pin-up boards for greeting cards, and shelves for flowers all help to add life and to provide a pleasing room appearance. One warning gained from experience with wall decorations is that mirrors should be placed so that they will not reflect light into the patient's eyes.

Floors. An ideal floor is one that is attractive to look at, comfortable to walk on, and easy to maintain. Hard floorings such as terrazzo, marble and travertine, and tile (both quarry and ceramic), which are generally used in public areas because they are indestructible, are normally not used in patients' rooms because they are considered hard on the feet. That may not be a universal reaction, however.

Resilient floorings bear most of the burden in patients' rooms. Vinyl asbestos tile is the most generally used because it is more durable than asphalt tile and less expensive than rubber and solid vinyl tile. However, many hospitals have found that it too will require a protective coating, such as a poly-resin liquid, or some other floor finishing sealer.

Until recently, carpeting has not been used extensively in patients' rooms because it has been thought to be expensive and to harbor chemical and food spillage. The matter of initial expense is said to be offset by the time-saving maintenance of vacuuming—a daily chore that is much less demanding than the mopping and waxing of hard and resilient flooring. On the other hand, the several dry or wet cleanings that carpeting requires each year can create problems because of the longer time it takes to do and to dry. Furthermore, spillage must be immediately wiped up to prevent stains that, in many cases, are ineradicable.

Many hospital administrators have found that wool carpeting stains too easily and that it cannot be cleaned successfully with the frequency required in hospitals. Acrilan is found most stain-resistant, and nylon the most easily cleanable. Therefore, nylon in a tweed pattern is often the carpeting selected.

The question of whether carpeting will harbor bacteria or hold it till quickly removed by vacuuming is still a matter of controversy. However, some hospitals are beginning to use carpeting—not only in corridors, lobbies, and libraries, but also to some extent in patients' rooms, both for the reasons above and for its comfort, sound-absorbing qualities, and its attractiveness. "Without carpeting," one furniture manufacturer admits, "even an Early American hospital room looks cold."

Vincent Kling's new American Oncologic Hospital will therefore have carpeted floors so as to achieve a "homelike atmosphere to boost morale." Like schoolrooms, kitchens, and bathrooms, the hospital patient's room may be the next conquest for the aggressive and productive carpeting industry.

Ceilings. Hospital ceilings are usually not higher than 8 ft, whether they are of plaster or are suspended acoustical ceilings. It is fairly common to tint ceilings to blend with wall colors, but bright prints and white paint are generally avoided. More on color later, however.

Windows. Windows represent the patient's contact with the outside world, and are thus one of the most important elements in hospital room design. A too-small window can create a jail-like feeling, however, wheras an overly large window can cause disturbing glare. Conversely, even a small window on a south wall can intensify the glare because of the contrast made with the surrounding wall. A generally accepted window size for a wall 8′ x 12′ is one 5 ft high and 6 ft wide.

Windows that extend to the floor are considered as hard to

clean and give many patients an insecure feeling. Furthermore, a table-high window sill is a good place to display flowers and get-well cards, if the sill is wide enough. Some hospitals favor a long, narrow window on the corridor wall to provide the patient with a view of hall activity and to allow the nurse to check on the patient without stepping inside the room.

Hospital administrators judge window coverings today in terms of both psychological contribution as well as maintenance and privacy factors.

Vincent Kling's new hospital, for example, will have louvered wood shutters at the window. If a window can provide only a dull view, then decorative panels are sometimes considered.

Colorful curtains have been found to be less costly to maintain than Venetian blinds, and they can be more variedly decorative. Furthermore, curtains that are sill length are thought preferable to floor draperies because they are even easier to keep clean.

Virginia Whitmore Kelly has used bright window shades so as to eliminate soft fabrics altogether.

Although window coverings can be lined to reduce light passage, many hospitals prefer to use unlined draperies over sheer window curtains so as to provide privacy yet admit enough light to allow the patient to move around safely.

Fire laws, of course, limit the number of fabrics that can be used in hospitals as window coverings, usually resulting in treated cotton or glass fiber. The latter has been found to shred with abrasion, with resulting skin damage to patients. This material has also been found highly shrinkable. So proper precautions and investigations are recommended, for many new glass fiber draperies have been developed in the past several years.

One recent new development, which is gaining acceptance in hospitals as well as other buildings, is the European-developed Amelco window that sandwiches a Venetian blind between two fixed sheets of glass. Architect Joseph Blumenkranz, for instance, has announced that his firm will use this window in the new Bellevue Hospital building now under construction in New York. The reason for its acceptance is that it combines the advantages of the traditional Venetian blind with the maintenance requirements of a window only.

Furniture. The basic furniture requirements of a hospital room are: a bed, bedside cabinet, or console, chair, chest, and closet storage area. The largest space-taker is the bed, since the architect must allow 3 ft of free space on each side of it and 5 ft at the end.

Nurses more and more seem to want the headboard and footboard of beds to be removable. And electrically operated beds are increasingly considered as one of the most time-saving innovations in years. One interesting recent design is that by Emily Malino Associates for a psychiatric ward. Since two distinct sets of patients use the ward, one group by day and the other by night, a fold-up bed was used so that there would be much more floor space for daytime group-therapy sessions. This return to the traditional "Murphy Bed" technique may be a more widely useful idea for the problem of today's space squeeze.

Built-in wardrobe units, which have often been found economically more feasible than closets, are usually about 24 in. to 30 in. wide, 2 ft deep, and 7 ft high. In many cases, single or double chests are placed outside the wardrobe to complete the requisite storage space.

According to Charles Parks, "Bedside consoles also have recently been designed as built-ins, so that nurse call systems, telephone, radio and television, tissue dispenser, and essential hospital equipment can be conveniently accommodated.

"The growing practice of early ambulation for patients," Parks continues, "has increased the demand for comfortable arm chairs with high or adjustable backs. Electrically adjustable beds are also being used in self-care areas—and for visitors who are allowed to remain in the room overnight.

"Fortunately, institutional furniture is in the midst of a campaign of improvement. [*The new French Provincial hospital furniture is not the best part of this campaign.*—ED.] Built-in and steel-frame furniture that can conserve both space and construction costs also offers visual advantages. Plastic laminate panels, for example, offer the visual impression of wood or good solid colors in combination with the structural advantages of steel. In addition, maintenance costs have been found to be reduced with steel-framed furniture and laminates, which resist scratches and most chemicals."

One claim of some furniture manufacturers is that the low design standard of hospital furniture is due to hospital administration, which insists on absence of details so as to eliminate places where "staph"

PHOTOS: EZRA STOLLER ASSOCIATES

For a psychiatry ward at New York's Mt. Sinai Hospital, fold-up beds are used to provide space for group therapy in the daytime. Designer: Emily Malino Associates, Inc.

Walls: painted plaster/pastel blue and green/Devoe Paint Co. **Floors:** vinyl asbestos tile/beige marbleized/Ruberoid Co. **Beds, shelf units:** birch, aluminum/Charles Eames design/Herman Miller, Inc. **Chairs:** aluminum frames/Crucible. **Upholstery:** vinyl/blue apple green/Ford Co. **Tables:** pedestal/white/Eero Saarinen design/Knoll Assoc.

can collect and spread.

Upholstery. Wool upholstery, like wool carpeting, is generally thought to be uneconomical because it is comparatively difficult to maintain. Frequent shampooing causes it to fade without entirely removing the stains. And ink stains from magazines, which rest on the chairs occasionally, are indelible.

Naugahyde, or other vinyl upholsteries of which wide varieties of handsome items are available (even though they are not frequently used), seem to be the most durable and acceptable—even if the textures of these materials are generally found unsympathetic.

Lighting. One frequently ghastly aspect of a patient's room is garish artificial lighting. But the increasing promotion of striplike shelf lighting units for behind the bed may help to improve this situation; it should be placed so as to be clear of traction equipment, however, and with a long and sturdy-enough pull cord. Cords, incidentally, seem to need some research to discover one that will not be harsh like metal, yet will not stretch or break like cord or metal, and will not get dirty. Hospitals seem to want everything.

Recently, attention has also been called to the desirability of good nighttime lighting of long corridors and exterior views as helping to improve the morale of patients and of nursing staff who are up during the bleak black hours.

Color. Color, this most endlessly discussed element of hospital interior design, is admittedly the most useful design tool for "budget" jobs, as things stand at the moment. Sometimes it is the only design tool available to the hospital room designer.

What colors have been most commonly used, however, are rather pale "pleasant" pastels —"light, subtle shades of yellow, beige, peach, blue, green, and pink." Most often avoided are chartreuse and wine and gray, which tends to look soiled, and white, which increases glare.

When Gerald Luss, for example, worked out a color-coded traffic and location program for the North Shore Hospital on Long Island, he used strong colors in public areas and elevator lobbies. In the patients' rooms, woodlike surfaces on beds and cabinets were replaced with fairly bright hues of colored plastic laminate surfaces. Headboards and footboards, also of plastic laminates, are in wide stripes of soft beige and white. Compared to the vibrantly color-coded corridors, however, the patients' rooms are relatively bland.

Designer Emily Malino, who has had considerable experience in hospital design, is in some agreement with Luss. "The colors, particularly in a psychiatric hospital," she says, "must be carefully selected to achieve a harmony with the use of the room. A day-dining-room could have a wall of bright blue, or a strong gold, whereas a patient's room, where he is likely to spend more time, must be less exuberant in color. Still, as many colors as are consistent with practicality should be used, if only to relieve the monotony of the necessary uniformity of furnishing in any one institution."

Virginia Whitmore Kelly, on the other hand, has for several years been convincing psychologists and other hospital administrators, notably at New York's Montefiore Hospital, that even a vehement reaction of dislike for a color on the part of a patient is more energizing to him than a no-reaction to a bland color. "Any focus out of himself," she says, "and away from his own troubles, is beneficial. And sometimes to achieve this it is necessary to use a shock of color." Courageous hospital administrators who have permitted her to "experiment" with her theory have subsequently come around to agreeing that reaction and action to surroundings are some of the most beneficial stimuli to recovery from illness.

Virginia Whitmore Kelly's shock colors (used before they became so fashionable in women's wear) have been combinations of red and orange or pink and orange, for example, used in baked enamel on the doors of white cabinets, in wardrobes, and on the sill and reveal of the window. She also thinks it "silly that patients always have to look at a white ceiling."

This matter of using strong colors is now one of growing controversy in the hospital field.

Bathrooms. Finally, the most standardized aspect of a patient's room is the bathroom. Usually 3′ x 4½′, many bathrooms in hospitals are 5′ x 5′ for more commodious maneuvering by both patient and nurse. For more invalided patients, there are larger bathing alcoves not connected with a private room. But it is now thought almost mandatory for each unit to have a private bathroom with tub or shower; shared bathrooms as an alternate solution occasionally cause problems when a patient forgets to unlock both doors when he returns to his room.

The study of fixtures and handles is one of the most interesting areas of patient room design, and it is one that has received some of the most detailed attention. Rounded corners, grab bars along walls, heights convenient to both wheelchair and ambulatory patients, faucets controlled by levers that are operable by wrist or elbow, among others, are details that have been carefully studied.

The bedroom is not nearly so interesting in general. But it could be—and it should be.

PHOTO: LAWRENCE S. WILLIAMS, INC.

Mock-up of patients' room in the projected American Oncologic Hospital by Vincent G. Kling & Associates, Architects, shows carpeted floors and window coverings of wood louvered panels. Use of these materials is based on "a recognition by the hospital board and the architect that institutional overtones must be cast aside for an environment that unites the patient with nature, a feeling of universal harmony, hope, and reassurance." All rooms open onto continuous terraces.

For basic research on this article, P/A is indebted to Charles Parks, Merchandising Manager for the Contract Division of the Simmons Company. During the past 20 years, he has discussed room design techniques and directions with hundreds of hospital administrators.

WHAT HAPPENED TO THE ART IN ARTISAN?

Does the woodworker's work in art or the artist's work in woodwork go against the grain of the artisan's art?

The self-sufficient pre-industrial artisan operated in the happy triple capacity of designer, fabricator, and merchandiser of his art. He invented woodworking machinery for the benefit of his triple functions. As designer, he found that the hard work could be done mechanically, as craftsman he found that mechanically it could be done efficiently, and as merchant he found that machine efficiency made money. He never anticipated that the woodworking machine would cut his art into its present trichotomy, where the designer has all the fun, the tradesman does all the work, the merchant makes all the money, and the artist disappears altogether.

The contemporary machine hand finds himself imprisoned between the cross-cut gage of the designer's lack of machine knowledge, and the rip fence of the merchant's economy. Today's tradesman has lost the skill of hand tools through disuse, and his machine skill is ignored. His machine dexterity goes unrecognized by the designer and unexploited by his employer. Instead, his skill is reduced to a simplicity of efficiency where the ultimate function of the tradesman is unimaginative exercise of precision—a precision whose unkindest cuts are the slicing of wood like a delicatessen machine, to papering walls, or cornering the corney miter, or stripping panel joinery to the feature strip.

But even as unimaginative as these academic standards have become, they are not as disastrous to the artistry of wood joinery as are the taboos they have engendered. End grain is indecent, as if we were ashamed of letting people know where trees come from. A horror is expressed at machine marks, and the revulsion to unmatched veneer would make people believe that acorns were artificially inseminated. Kiln stains, knots, and all the irregularities natural to live material and its manufacture are avoided like the pox. In short, everything that differentiates wood from plastic is prohibited. The result is a clean-cut sterility from generations of toilet-trained machines.

We could, of course, scrap our problems by scrapping the machine. This would be no hardship for the designer, since he would lose little knowledge of the machine's function. The contractor, whose function is selling, would merely not sell wood. But to scrap the machine is to eliminate the skills of the machine hands. It seems a much more sensible idea to activate the motivating instincts of the three participants instead of destroying them. The inventive desire of the designer, the wish for work satisfaction of the tradesman, and the profit motive of the merchant, if they could be unleashed, would activate the muse. Work fulfillment and avarice are a formidable combination on the side of creative activity.

If we analyze our present condition, we find the designer, with a simple knowledge of how the machine works, combined with the contractor, who knows how much it costs to work the machine. These two mutually complementary controlling elements, when compounded, add to design sterility. This insidious, self-supporting relationship tends to obliterate woodwork design.

The objective for creative machine woodwork would seem to be to break the mutually controlling round robin. While there is, of course, no possibility of amalgamating the present trichotomy of the pre-industrial revolutionary artisan, there is very little excuse, despite the mechanics of the situation, for accomplishing less with three people than was for-

Men of the Harold Bartos Woodworking Shop, Long Island City, New York.

merly done by one.

We might return to the source and call back into the picture the artist, putting art back into artisan. The positive possibilities of woodwork have already been illustrated by a number of contemporary sculptors who have accepted the existence of the woodworking machine much more than the designer, the machine-hand, or the contractor.

Jean Arp, Louise Nevelson, and countless others, in their pursuit of the sculptural meaning of material and their efforts to extract new meanings from prosaic forms, have uncovered a number of techniques ignored by designer and merchant.

It would seem that the ideal condition would be for the designer to create a condition wherein the artisan can exercise his skills like the contemporary sculptor. The dichotomy of designer and craftsman can perhaps be erased by making the machine an extension of the craftsman's hand rather than the dominator of the craftsman's skills. The designer could assume his rightful position as the user of men's skills rather than the authoritarian dictator of them. The merchant would be pleased by selling what he formerly threw away.—FW

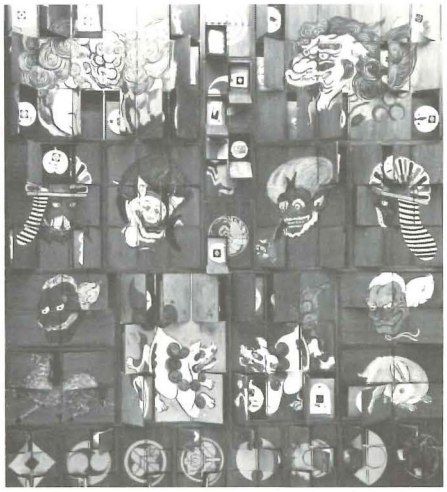
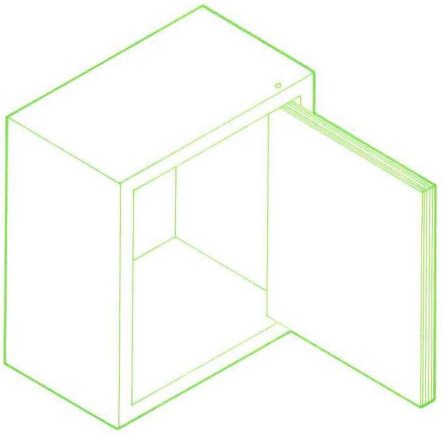


PHOTO: COURTESY: TOKYO GALLERY

Yukihisa Isobe has used an ordinary cabinet technique to construct a series of shelves, closed by hinged doors, which allows an interchangeability of image and change of focus and play of combinations with his form units. These simple architectural woodwork constructions, graced by the provocative painting of Mr. Isobe, have been exhibited in his native Japan, as well as in Europe and North America.



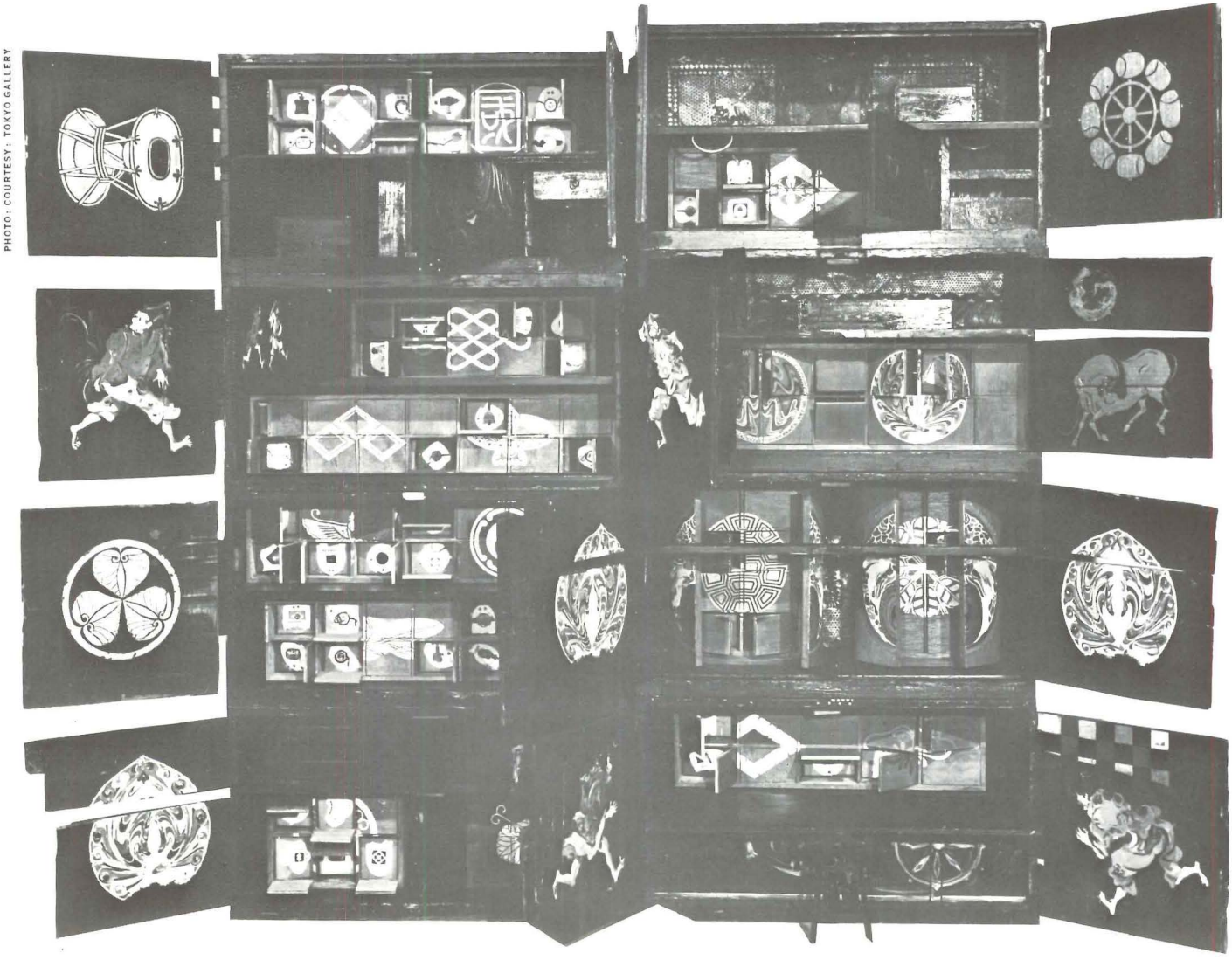
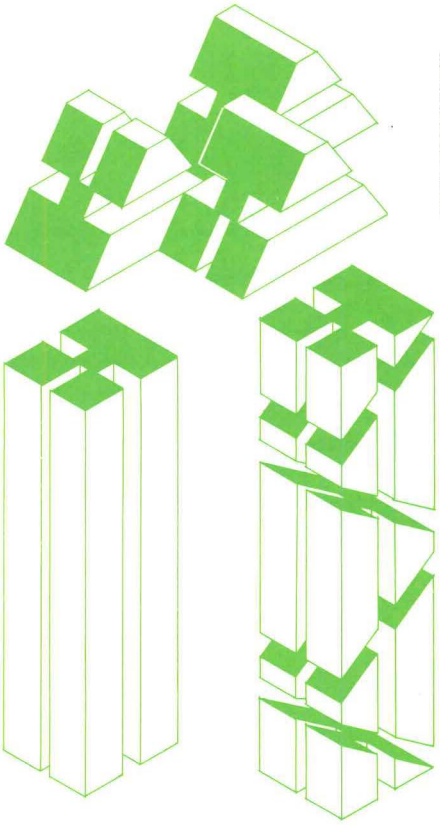
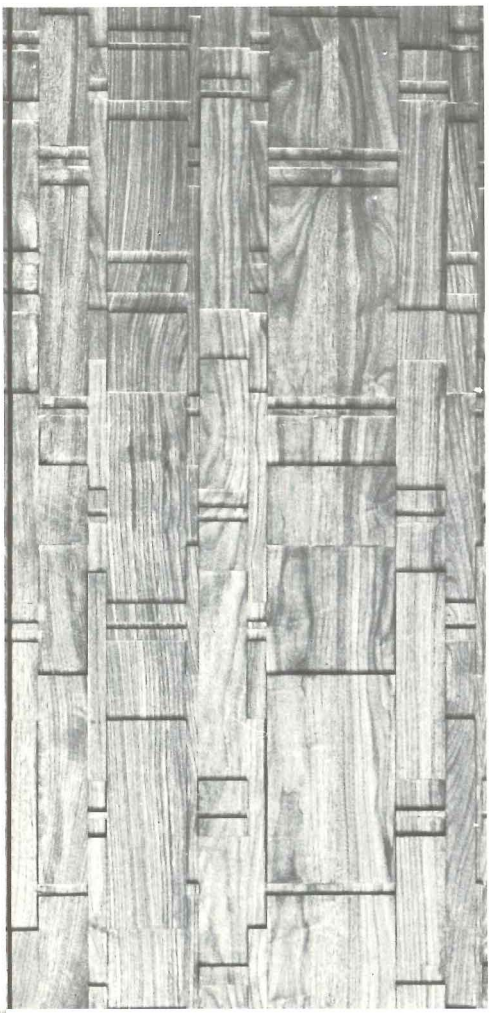


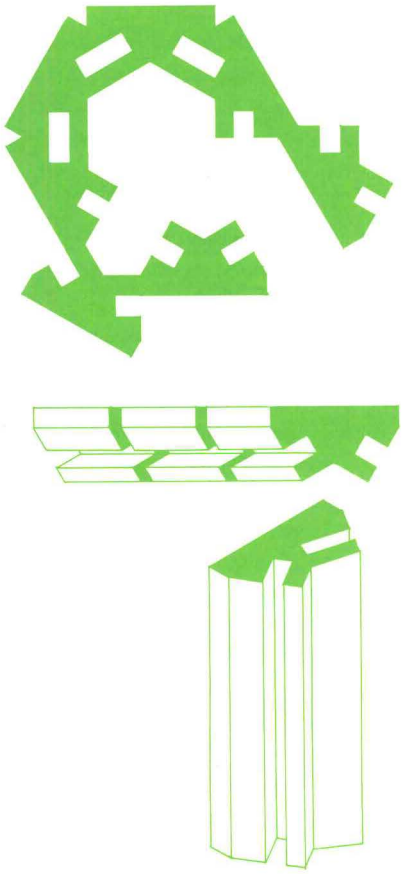
PHOTO: COURTESY: TOKYO GALLERY



Detail from sculpture exhibited in New York gallery (below). Mitered, dadoed blocks cut from strips combined into pattern. Entire operation with dado head and planer blade on circular saw. Ruth White Gallery, New York City. Artist: Forrest Wilson.

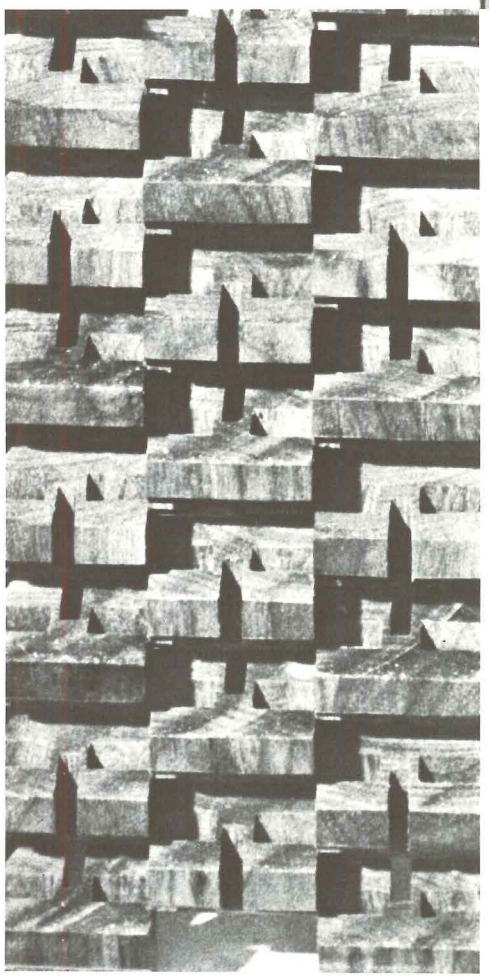
PHOTO: FORREST WILSON





Circular saw cut blocking (below), same as used in creating the door patterns, combined in geometric patterns. Forrest Wilson.

PHOTO: FORREST WILSON



Door patterns (above) predicated upon the golden section. Laid out for hand router operation in a simple jig. Pieces rip sawn and recombined as a veneer laminated to standard mineral door core. Bastard sawn unmatched walnut, with machine tool marks retained. Woodworker: The Bartos Co. Designer: Forrest Wilson.

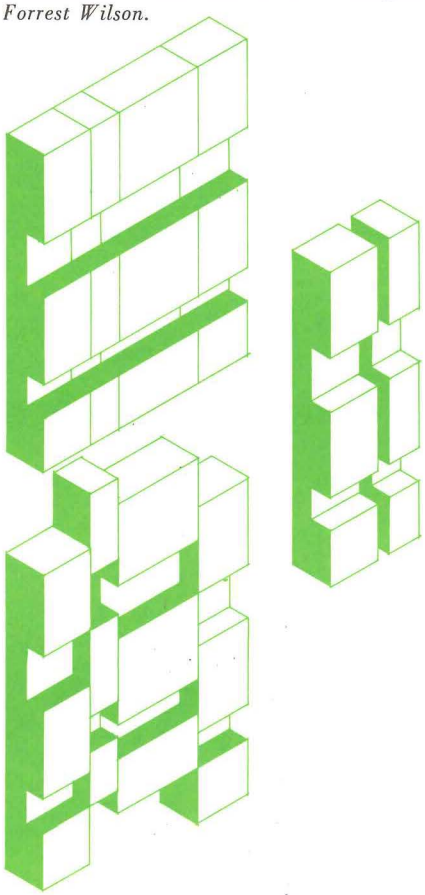
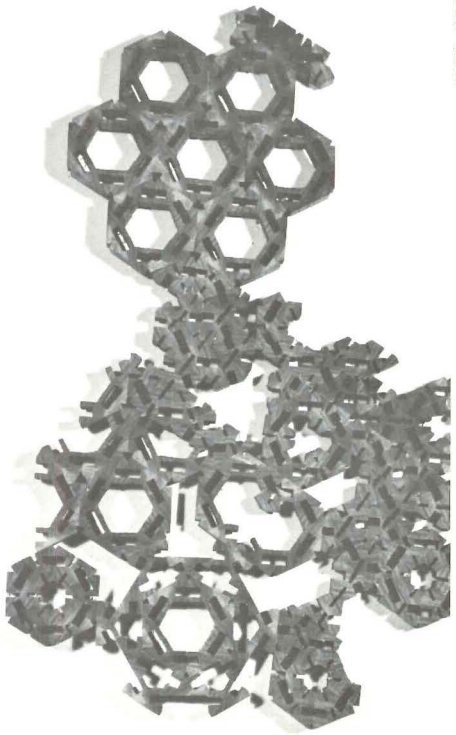


PHOTO: FORREST WILSON



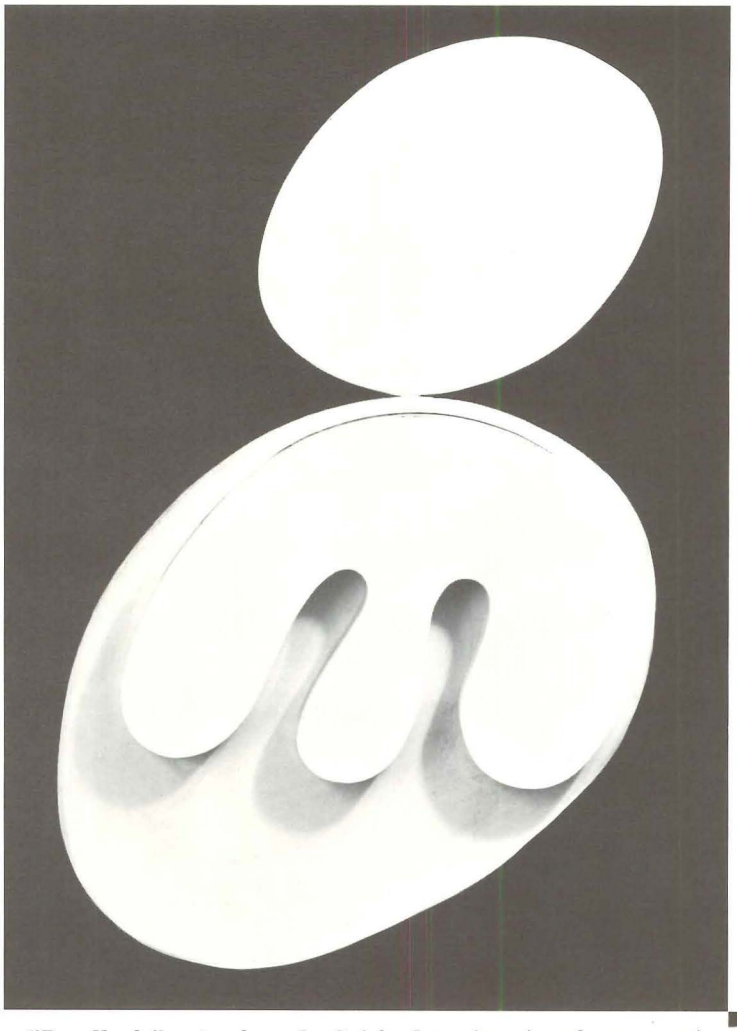
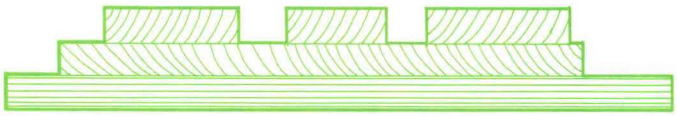
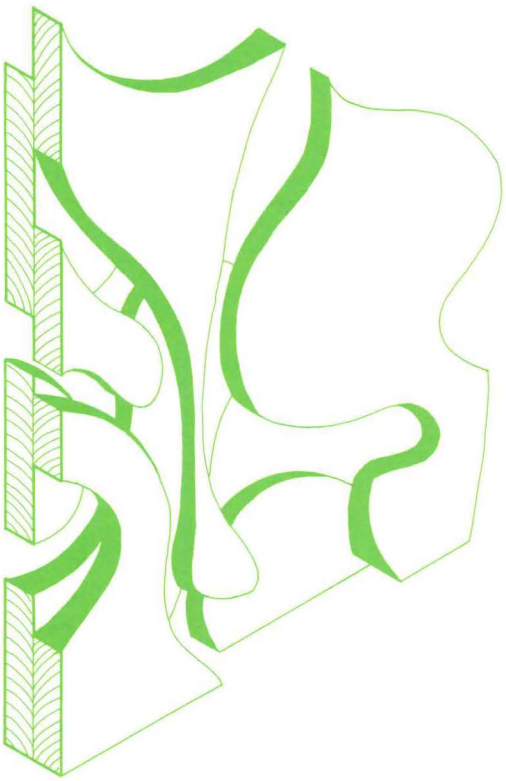


PHOTO: THE MUSEUM OF MODERN ART

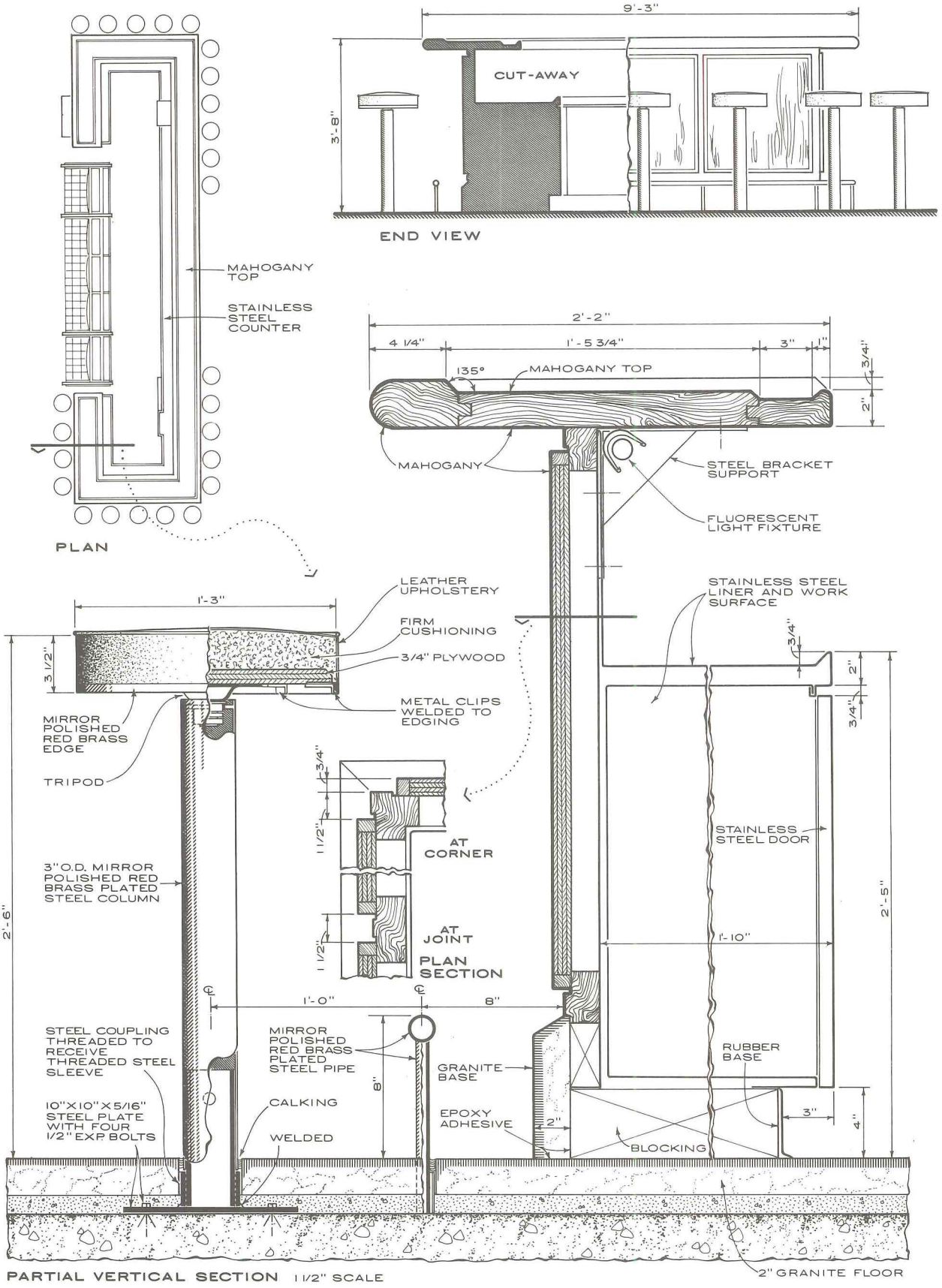
"Two Heads," painted wood relief by Jean Arp. Arp, the master of materials, uses uncomplicated painted wooden forms, which were imaginatively lighted by the museum to cast background shadows of varying intensity, giving added depth and interest to this simple woodworking technique.





In an unabashed plagiarism of Arp's inventive technique, the author assembled these discarded shapes from the trash barrel of a woodworker's shop to create a silhouette effect and mask an unpleasant view.

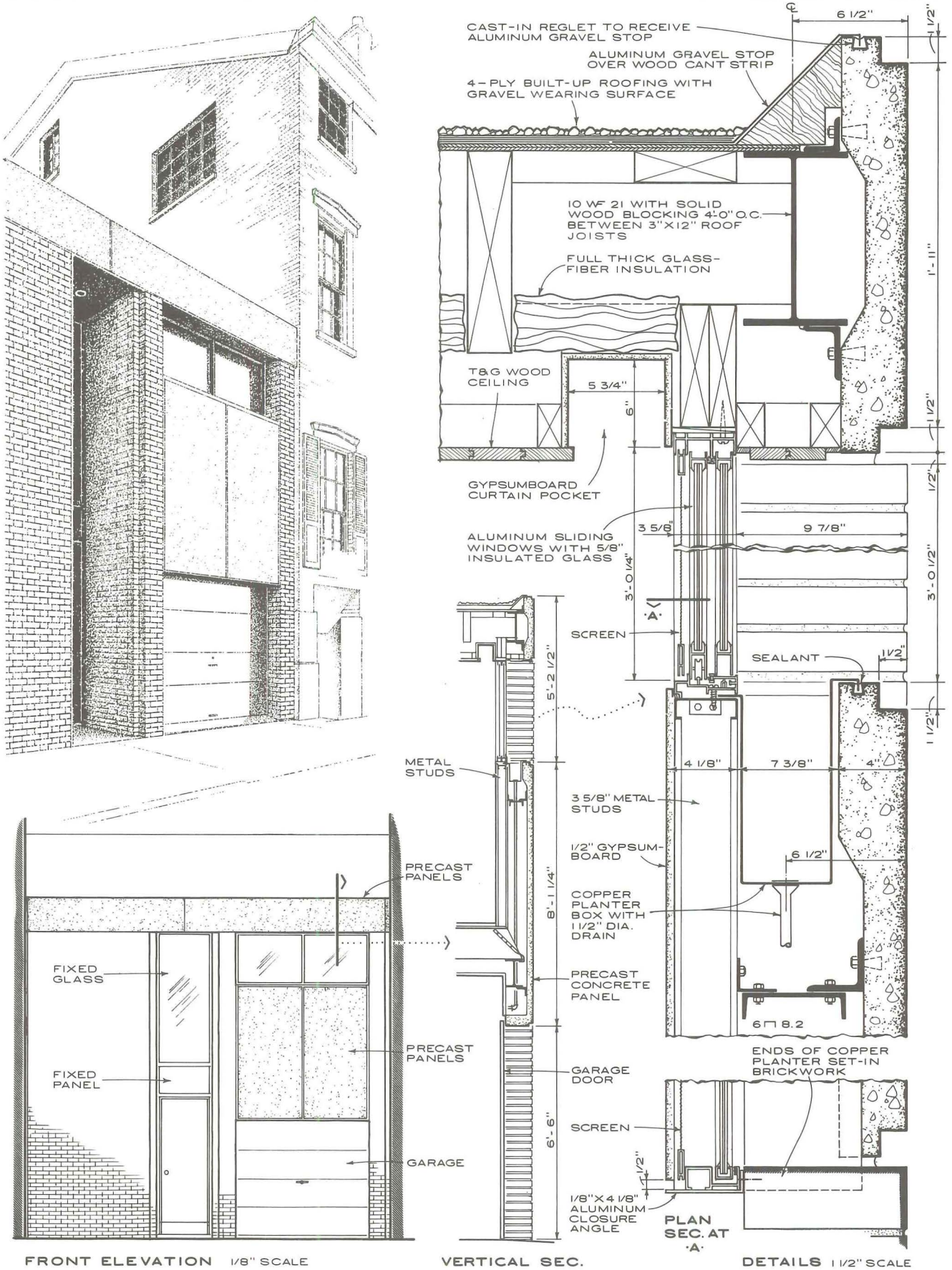
PHOTO: FORREST WILSON



*THE GROUND FLOOR, CBS BUILDING RESTAURANT: New York, N.Y.
EERO SAARINEN & ASSOCIATES, Architects; WARREN PLATNER, Designer

SELECTED DETAIL
BAR

* See MARCH 1966 P/A



*HELMUT JACOBY TOWNHOUSE: New York, N.Y.
LEONARD FELDMAN & ASSOCIATES: Architects; HELMUT JACOBY, Designer

SELECTED DETAIL
WALL SECTION

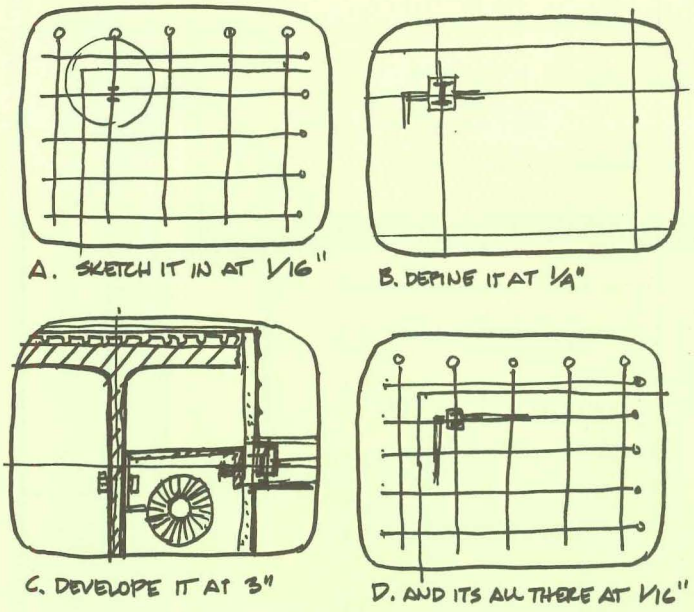
* See May 1966 P/A

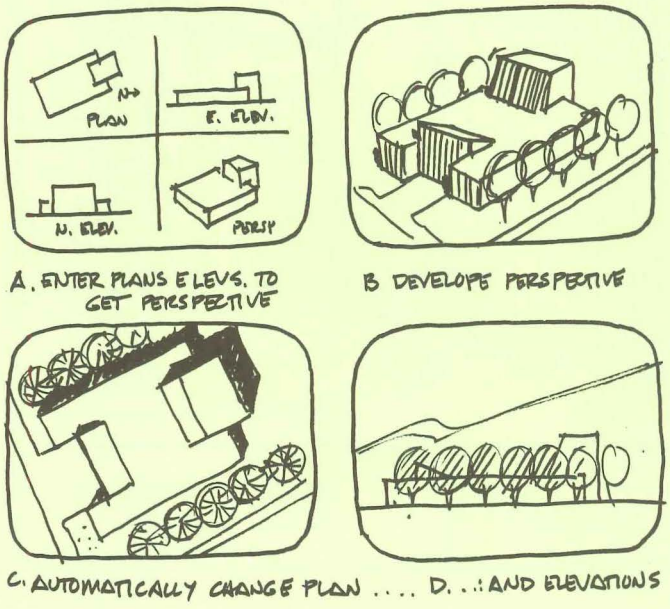
DESIGN WITH COMPUTERS?

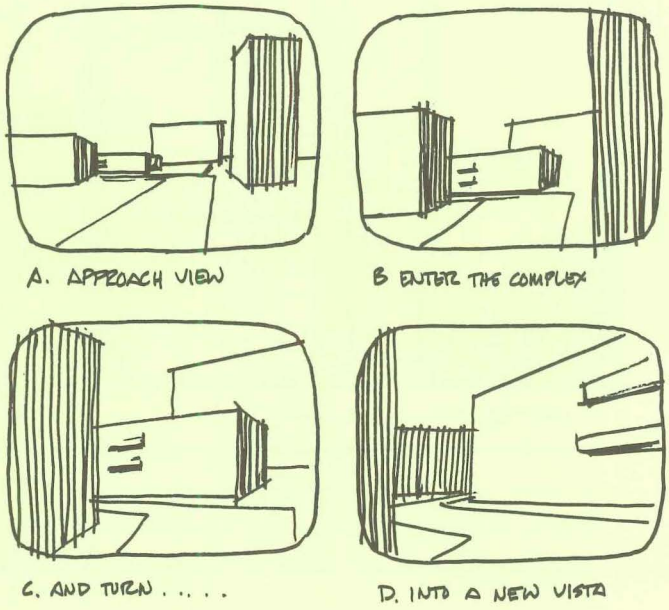
IT'S WHAT'S HAPPENING, BABY!

Sitting at the screen of a computer graphic device can be an awesome experience the first time. This article brings the computer screen into focus and removes some of the mystery.

By Clifford Douglas Stewart and Frank de Serio of the Center for Environmental Research, Boston, Mass.





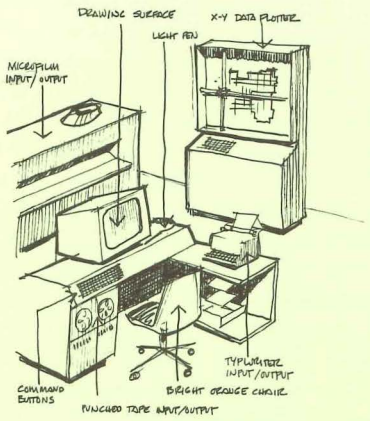


SKETCHES BY CLIFFORD STEWART

Architects have talked about designing and drawing with computers in the same way they talk about a six-month cruise to the Orient or Greece: It's something that will happen sometime in the future, and then probably to someone else. But now the dreaming days are over and it's time to get on the ship.

Computers have been heralded for relieving men from the drudgery of monotonous, routine operations. The computer, however, may do even more than that for architecture: It may save the profession from a forthcoming manpower shortage. At present, architects are responsible for about 10 per cent of this country's total construction. This 10 per cent, claims the profession, includes all the significant buildings. However, predictions show that the annual construction volume is going to double in 10 years, and unless the architectural profession grows at this rate in manpower or productivity, it will not be doing all the significant buildings in 1976.

Manpower does not have much opportunity to grow because the architectural schools graduate only 1600 to 2000 architects a year, and many of these graduates are ill-equipped for professional work. Architectural offices must therefore increase their productivity, and this is where computers can come to the rescue. Preliminary studies indicate that computers can reduce office man-hours by 75 per cent without sacrificing the creative thought or individuality inherent in the best architectural work. Individually, an architect can devote more time to designing. Instead of the current average of



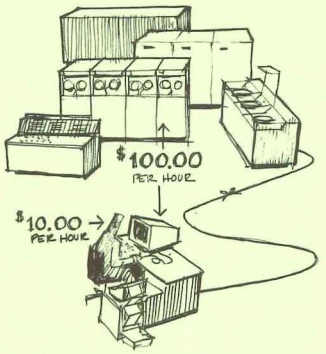
TYPICAL DESIGN & DRAW GROUP

spending 15 per cent of his time designing, a man with a computer can assign 85 per cent of his day to design.

The Fascinating Light Pen

The emotional experience of a man designing with the aid of a computer is as satisfying and exhausting as skydiving, and, barring short circuits in the hardware, much safer. Computers are invariably installed in a somewhat theatrical setting: In a typical computer room, the lights are dimmed and the walls insulated so there is little sound except the whirring of air-conditioning equipment. Several brightly-colored, comfortable chairs, some consoles with TV screens, and a table comprise the furniture.

The center of attraction is a console with a screen similar to a TV set. Beneath the screen are rows of buttons, and a wand, called a light pen, attached to a cable. This is the graphic device that enables designers to dispense with reams of paper and hours of time. Three other pieces of equipment complement the machine: a plotting machine for making



THE ARCHITECT CANNOT BE INTIMIDATED

hard copies of drawings developed on the computer consoles, a microfilming machine, and a table containing a sophisticated "magic slate" on which an operator can handwrite instructions to the computer. The computer is able to decipher handwriting. However, "magic slates" are prohibitively costly, and a typewriting device is usually used.

Drawing with a light pen on a cathode-ray tube is simple. A designer can draw free-hand or draft accurately without any instruments. By punching appropriate buttons on the console, but still drawing free-hand, he can draw straight lines, circles, polygons, parallel or perpendicular lines.

The experience of drafting at the console for the first time (usually after midnight, when the contracted processing work is completed) is well described by J. C. R. Licklider, an authority on computers: "Rationalizing away the insecurity induced by comparing his $5 or $10 an hour with the computer's $100 or $500 an hour, a man may sit down at the console, throw a switch or two, type his name on the input typewriter, or handwrite it on the magic slate. That experience is like sitting at the controls of a 707 jet aircraft after having been merely a passenger for years. There is a thrill of a sort, but a reluctance to maneuver boldly."

A New Toy

A newcomer to electronic drafting could start with free-hand sketches of a simple floor plan and two elevations. By turning a knob, he can enlarge the sketches to the full size of the screen. Then, feeling like a boy on Christmas morning, he can experiment by pressing a set of buttons that convert the screen image into a perspective of his original sketch, and rotate the image about any axis. The ability to convert plans and elevations into perspectives will be further developed in a year or two when the equipment will enable a designer to "move through" a perspective into a building. Some machines can already "erase" construction lines not seen in the final perspective.

Encouraged by the ease of the operation, the neophyte electronic draftsman might press buttons to call for trees, people, cars, and wood textures which he has drawn in his own style. With great delight, he finds these symbols can be enlarged or reduced individually, and positioned on the screen with the light pen. Textures are manipulated like patches of Zip-A-Tone. The elapsed time from the first sketch plan to filling in shadows is about four minutes.

If a hard copy souvenir is required, a print can be delivered from an adjacent machine. The size of the print is determined by the operator. As a refinement, the room can be equipped with a data plotter for making ink drawings directly from information stored in the computer. These drawings can be on vellum, graph paper, or mylar rolls up to 42 in. wide and 120 ft long.

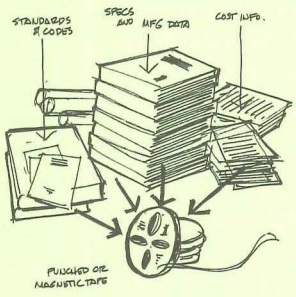
At this stage, only a power blackout could move the initiate from the console, but it is still only a new toy to him. To use this type of equipment only for its drafting capability is like buying a car in order to have a portable ashtray. The graphic capabilities of the computer enable a designer to put information into the machine in addition to allowing him to exchange information and manipulate the graphics in a direct, simple manner.

The full scope of the computer's graphic equipment can be arbitrarily divided into schematics and design development. However, the two processes are not completely separated. A designer working without computer aids is well aware of the interaction between them, and with computers the same procedure can occur.

Schematics

Computers are ideal for posing questions in the form of a displayed checklist that forces a designer to enter all the available information gleaned from a client and a site study. During this process, the com-

puter is sure to catch inconsistencies, uncover contradictions, and pose questions based upon the designer's previous answers.

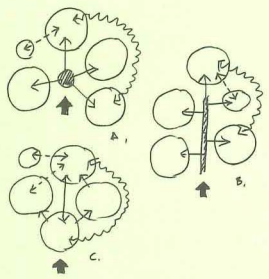


READY ACCESS TO VAST AMOUNTS OF DATA

Computers can also assist in making schedules of occupancy. For instance, classrooms in an average college are used only 40 per cent of the available time, and only half the seats are occupied. This occupancy rate can be improved if fewer classrooms are built. To arrive at the optimum number of rooms, an architect can work with a school's class scheduler and run a program such as the Generalized Academic Simulation Program (GASP) through a computer. The results can lead to an 80 per cent use of rooms with an 80 per cent occupancy of seats.

A designer, however, still has to use his own fund of information for estimating such requirements as parking space and elevator loads. But by systematizing the requirements through a computer that will display a comprehensive question list, a designer can speed the estimating process considerably.

At this stage of design, the operator is making subjective judgments on a level he can easily comprehend, and integrating his decisions in the computer to arrive at an over-all schematic diagram of, say, several room arrangements. This diagram can be a bubble diagram, a floor plan, or an isometric view.



STUDY VARIETY OF RELATIONSHIPS SIMULTANEOUSLY

The machine does not eliminate a designer's judgment in evaluating the schematics, but it does enable him to start revising concepts at a more sophisticated level than with normal procedures. It also can check tentative designs against building codes, standard requirements, and engineering design parameters stored in the machine.

Design Development

With several schematic plans to choose from, a designer assigns names to the rooms, together with maximum and minimum areas and minimum widths, and then lets the computer selects a module system best suited to the floor plan. Because not everything will fit on any given module and still meet the area requirements, several plans can be drawn by the machine. Each plan will have a minimum of misfitted space that the designer can adjust and feed back into the computer to try for a modular system that does fit exactly.

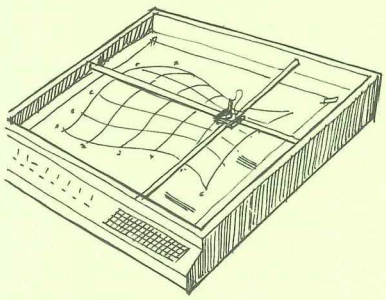
If room sizes can be juggled, the computer can rearrange the layout to cause the least oversizing or undersizing of the room areas. In many cases, a small change in module size (say 6 in.) will save a lot in total area. After establishing a floor plan, the designer and his machine can proceed to the elevations. For convenience, both plans and elevations can be shown together on the screen or one at a time. But no matter how they are shown, the views are intimately connected through the computer so that when a designer takes the light pen and puts a window in an elevation, the machine reminds him to mark the window on the plan.

If a window is specially designed for multiple use in a project, only one window needs to be drawn. All the others can be repeated and positioned instantly with a touch of the light pen. More probably, a designer would tentatively proportion and position a window, then request the information retrieval system to show all the windows meeting the dimensions, types, heat and sound characteristics, materials and prices. If the computer indicates a large number of manufactured windows fitting the criteria, the designer can reduce the selection by narrowing the criteria or make a limited random selection of windows to study. The window finally chosen can be transferred from the manufacturer's tape catalog to the elevation on the screen.

Taking the Work Out of Working Drawings

Working drawings can be made semi-automatically during the design process. Standard information, such as scales, north arrow, and title panel, can be added to a drawing by the touch of a button and a wave of the light pen. Then parts of the design drawing can be recalled to the screen for enlarged details to be developed. A designer can put into the computer an "invisible grid" that corresponds to a given reference, say brick joints. All subsequent elements, such as doors and windows, will automatically be lined up with the grid unless overruled by the designer. Brick courses or individual bricks can be drawn automatically, but this amount of detail is not recommended because there is a limit to the number of lineal inches that can be displayed on the screen. However, hard copy reproductions from the computer screen can include all the brickwork even if it is not shown fully on the screen.

From elevations and plans, the computer can make sections at points indicated by the light pen. This technique is particularly time-saving for shell structures that normally are difficult to draw and almost impossible to visualize. The designer, with the aid of a computer, can generate hyperbolic paraboloids, conites, hypars, sinusoidal slabs, and synclastic shapes in only a few minutes. A hypar structure, for example, can be generated by straight lines evenly spaced over a distorted rectangle. After defining the boundary conditions, a graphic computer can automatically draw quasiparallel lines to define the warped surface.



COMPLEX SHAPES EASILY DESIGNED, STUDIED, RECORDED

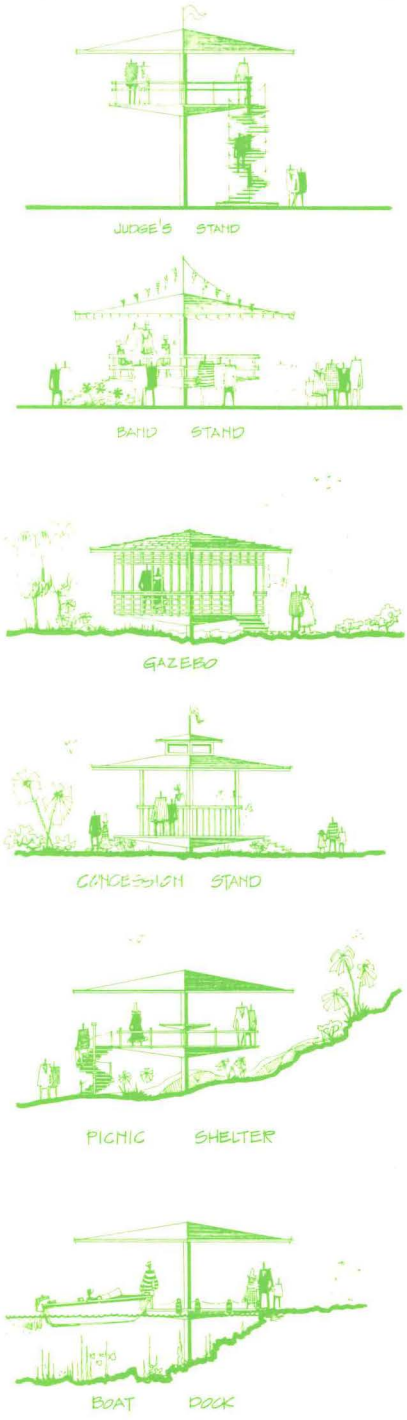
Revising drawings is as simple as making new ones. Part of a drawing can be "erased" and new details drawn in. These changes are automatically put forward into other drawings containing the revised section, and at the same time all the affected room, door, or equipment schedules are revised to meet the amended details. The original version remains on call in the machine.

The foregoing innovations in architectural office procedures may lead prophets of doom to cry that the machines are taking over. This patently is not the case.

Both in the schematics and in the more dramatic finishing stages, the computer does not design. What the computer does do is to eliminate the haphazard approaches to design, and premature designing, and in this way the computer influences design. However, computers work with a designer's lists, a designer's ideas, his priorities and schematics. The machine points up the designer's own contradictions and memory lapses, and consequently enhances the designer's own powers and minimizes his weaknesses.

CONCRETE PLATFORMS: A BASE TO BUILD UPON

Hexagonal roof and floor slabs cantilevered from a center column provide a starting-off point for a variety of low-cost buildings.



To meet the need for a low-cost, durable framework for week-end houses, a Texas architect developed a concrete tree to shelter homes from arid deserts or windswept shores. The concrete trees comprise a central column supporting two hexagonal slabs; one for a raised floor and the other for a roof. Any type of nonloadbearing wall extending between the two slabs can be used to enclose a building.

The trees, called PODs by the originator, Joe L. Williams, an architect in Corpus Christi, can be built singly for such uses as picnic shelters, or in adjacent groups to enclose houses, motels, or restaurants. PODs can also be built vertically so that several floor slabs cantilever from a center column instead of the basic single floor and roof slab.

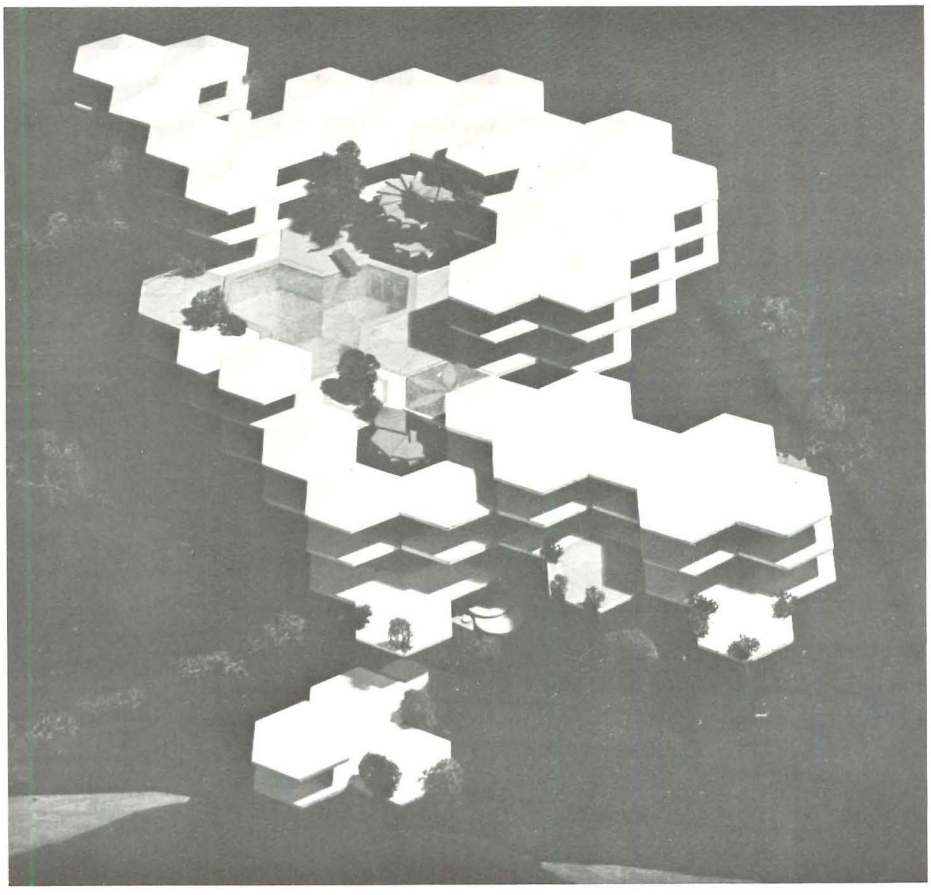
Williams recommends hexagons with 12-ft-long sides, which give 374 sq ft of floor slab. For this size, floor slabs taper from 18 in. thick at the columns to 3 in. at the perimeter of the structure. Roofs are built slightly differently from floors. Instead of a slab cantilevered from the column, Williams calls for beams cantilevered from the column to each corner of the hexagonal roof. Slabs span between the ribs. When PODs are built adjacent to one another, the slabs mutually support each other.

Columns also are hexagonal in cross section. A pipe embedded in the center of a column allows space for pipes and cables to enter a building from underground. This concealment is particularly important because the underside of the lower floor of a POD building is usually exposed.

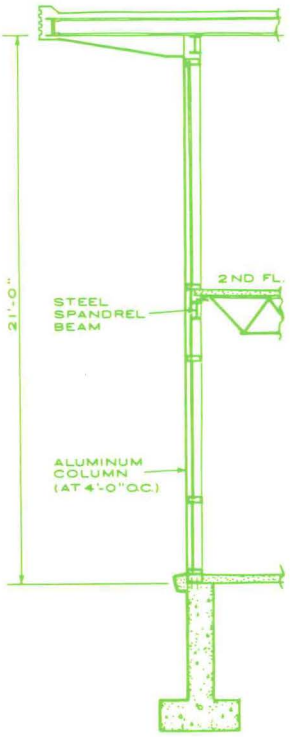
POD is not an acronym, but a name adopted by Williams to describe the roof and floor slab that contains the occupants of the building like peas in a pod. The applications for POD are numerous, and, says Williams, the $1.50 psf construction cost in central and south Texas is less than for a conventional timber frame.

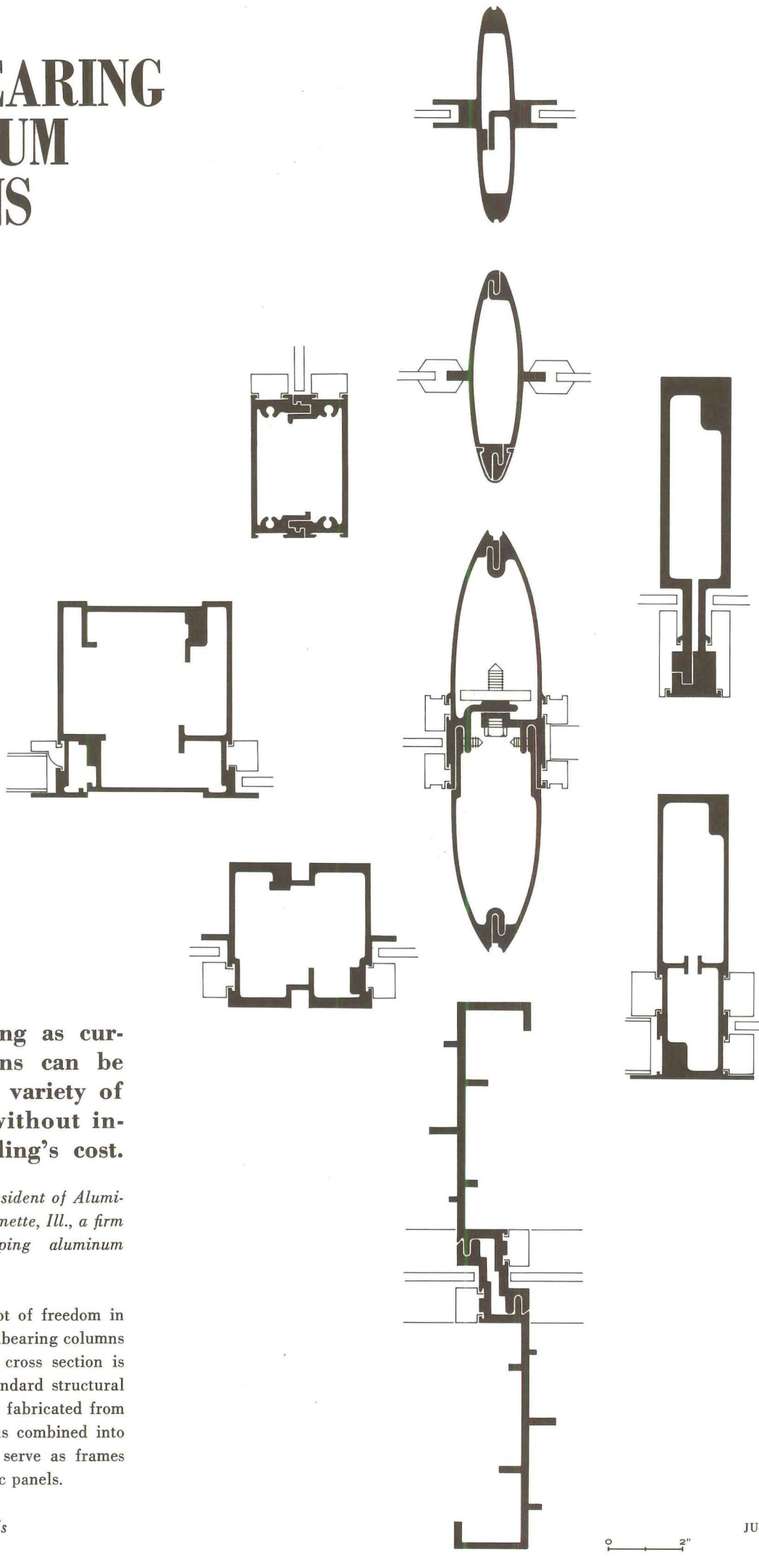
Foundations contribute greatly to the cost reduction. With rock only a few feet below grade, a single concrete footing for the column can be cast for $75. In poor soil where footings have to be excavated deeper or spread wider, costs may exceed $150.

The superstructure can be built in 160 man-hours by men unfamiliar with the system. After constructing one POD, the crew will average 90 man-hours for subsequent PODs. These figures are for construction with lumber forms, but Williams believes that if glass fiber forms were developed, the man-hours would drop to 65.



LOADBEARING ALUMINUM COLUMNS





Columns doubling as curtain-wall mullions can be designed with a variety of cross-sections without increasing a building's cost.

By James D. Wilson, president of Aluminum Structures Co., Wilmette, Ill., a firm specializing in developing aluminum columns.

Architects can have a lot of freedom in designing aluminum loadbearing columns because their choice of cross section is not limited by a few standard structural shapes. The columns are fabricated from a multitude of extrusions combined into slim supports that also serve as frames for glass, metal, or plastic panels.

This double service is the key to the economy of aluminum columns. They take the place of conventional steel columns plus vertical members of a framework supporting wall panels. Hence aluminum columns are best used in an exterior wall.

To assess the suitability of the material for a project, the following checklist should be considered.

- There must be—and this is the primary basis of judgement—an architectural design incentive, such as sight-line considerations, profile contribution, elimination of behind-wall columns, bulk reduction, or other related motives.
- Conditions must permit an incombustible structure, because aluminum columns are incombustible but not fire-resistive.
- The column should not exceed 10 in. in width or depth. Although 20-in. shapes are possible, delayed delivery precludes such large shapes.
- For custom-designed extrusions, the wall area should exceed 1500 sq ft to balance tooling costs with the value of saving metal.
- Columns should not exceed a 35-ft height.

Many buildings have conformed to these criteria. One of the earlier structures with loadbearing aluminum columns supporting a roof is the Westinghouse Telecomputer Center in Pittsburgh, designed by Deeter & Ritchie. Its aluminum columns are H-shaped sections with flanges designed to accommodate extruded neoprene glazing gaskets.

Another advance came with the design of two-story columns supporting a floor and a roof. At Broome County Community College, Binghampton, N.Y., A. T. Lacey & Sons called for 4″ x 4″ aluminum columns spaced 4 ft apart to carry a floor and a roof, and frame exterior wall panels.

Watch Your Weight

Without standard shapes to restrict him, an architect is free to design a column profile that he believes contributes most to the aesthetic and functional purpose of a building. An engineer can then translate this profile into an economical cross-section by distributing the metal to provide the optimum section properties to meet the loading conditions.

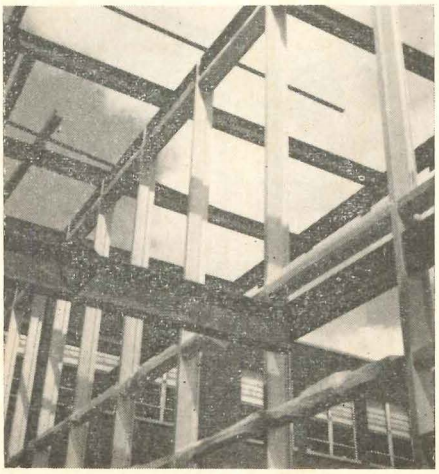
This freedom of column profile enabled the architect for the North Shore Gas Company office building in Waukegan, Ill., to call for a slim 2″ x 7¼″ column profile to support roof beams above 23-ft-high exterior walls. The design firm, Ganster & Hennighausen, did not want to support the walls with steel columns enclosed with aluminum.

Aluminum Structures Company developed a 6.2-lb-per-ft extruded aluminum column that was light enough to meet the firm's criteria that the practical amount of metal for loadbearing aluminum columns should be equivalent to 3 psf of wall area. Beyond this density, the cost is too high; but 3 psf or less compares favorably with the cost of steel columns and a separate framework for curtain wall panels.

Trial and Error

Most aluminum columns are fabricated with tubular sections because they have great torsional stiffness and improved strength in the conventionally weaker y-y axis. The structural geometry of a tube, e.g., wall thickness, size and location of wall stiffeners, is dictated by the loading conditions.

Since the extruded shapes are generally unsymmetrical, it is difficult to tabulate data. So a fairly laborious procedure of successive trials is made to establish optimum cross sections, moments of inertia, and slenderness ratios. These computations would be speeded with computer techniques.



Twenty-three-ft high aluminum columns carry wind and roof loads (above). Second-floor stair steel frames into aluminum columns at school (below).

After selecting a trial distribution for metal in a section, the column weight (which is the basic measure of economic practicality) can be assessed. From the column weight, the density of metal in the wall is easily figured. If this density is economical, the designer develops the geometric properties for I, S, and r.

Next, the engineer establishes the torsional constants (J), shear center, and the equivalent kl/r for lateral buckling and critical local buckling stresses. These are important because the unconventional shape and minimum amount of metal result in a number of thin wall areas, reentrant legs, bends, squiggles, and generally nonstandard elements that would dismay a designer accustomed to the regular conformity of wide-flange shapes.

Full-scale testing confirms the accuracy of the theoretical analysis of this type of column. A typical 9½-ft-long aluminum column, pin connected at each end, failed under a compressive stress of 3600 psi. Its computed failing stress was 3500 psi —a remarkably good correlation.

Final Check

The problems encountered with loadbearing columns are fewer than might be expected. The major issues are:

- Cost, which should be determined early before the design is committed.
- Delivery, which depends upon mill schedules, generally runs between 14 and 16 weeks.
- Protection. Because aluminum is erected early in a construction schedule, the columns must be protected from such things as mortar staining. Pliofilm tubes and strippable coatings offer good protection, and careful field supervision also helps.

Surprisingly, water leakage through an exterior wall does not appear to be a singificant problem. This probably results from the use of heavier sections for loadbearing construction. These sections are less prone to movement caused by buckling under temperature stresses.

Loadbearing aluminum columns do not have universal application for wall construction, but they do provide an answer to specific problems. Used properly, aluminum structural columns appear to have the potential for a significant contribution to architectural design.

WINCHES RAISE CABLE-HUNG PREFAB UNITS ATOP TOWER

Prefabrication could cut costs of building units suspended from economical cables hung from atop service core.

Despite the testimony of eminent engineers that cables are more economical than columns for supporting the floors of multistory buildings, financiers have been reluctant to back a cable-suspended project. Three years ago, two separate projects in Texas came close to fruition but died because the developers feuded.

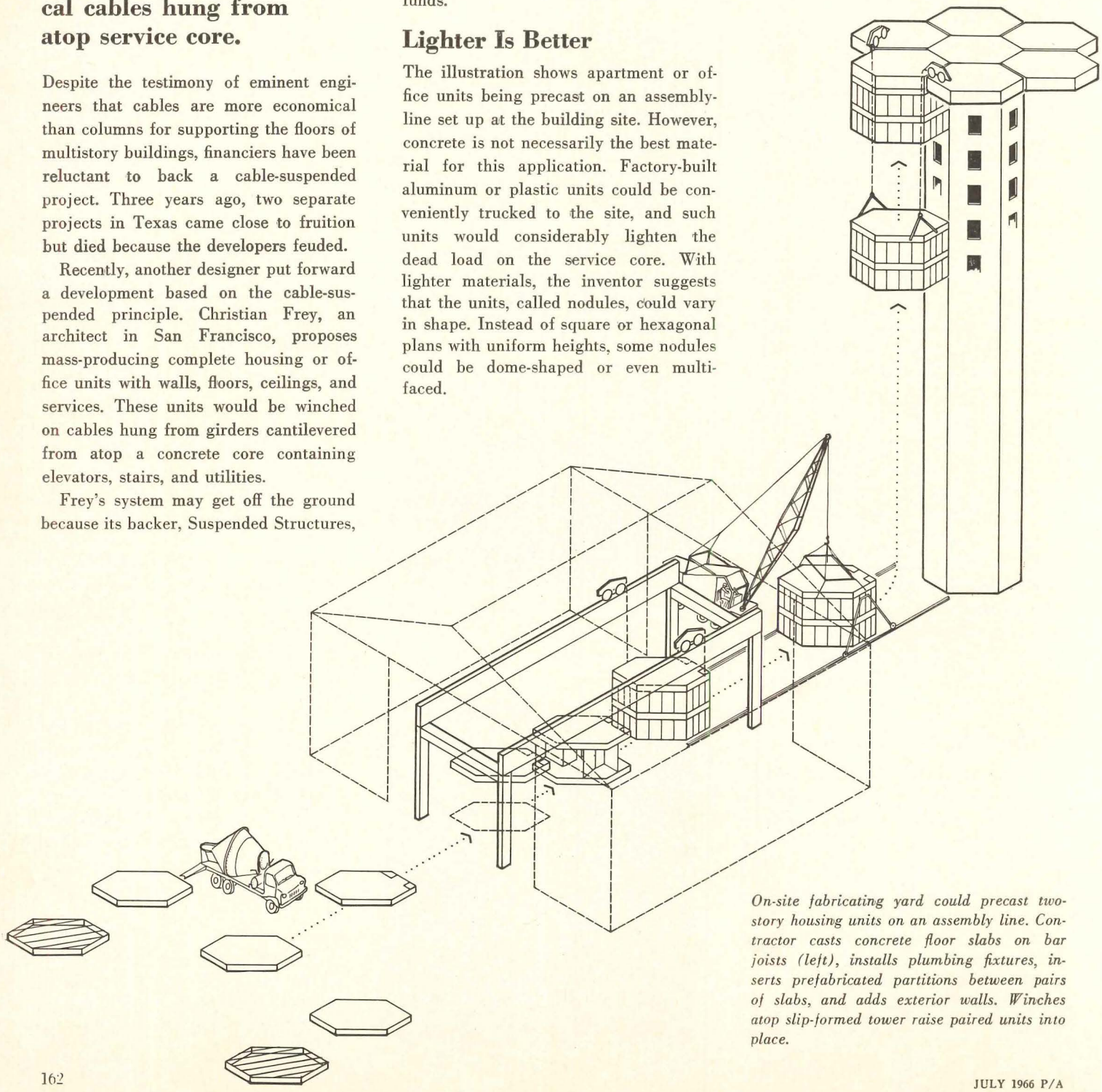
Recently, another designer put forward a development based on the cable-suspended principle. Christian Frey, an architect in San Francisco, proposes mass-producing complete housing or office units with walls, floors, ceilings, and services. These units would be winched on cables hung from girders cantilevered from atop a concrete core containing elevators, stairs, and utilities.

Frey's system may get off the ground because its backer, Suspended Structures, Inc., is promoting the cable-hung concept to city, state, and Federal governments. Suspended Structures offers housing, hospital, and dormitory officials an opportunity to halve construction time and thus reduce total construction cost by 30 per cent.

The firm believes that because cheaper techniques are available, public construction should not be unnecessarily subsidized. It cites new dormitories at the University of California costing $6700 per student annually for which the state can charge students only $5500. The remaining $1200 is paid annually from public funds.

Lighter Is Better

The illustration shows apartment or office units being precast on an assembly-line set up at the building site. However, concrete is not necessarily the best material for this application. Factory-built aluminum or plastic units could be conveniently trucked to the site, and such units would considerably lighten the dead load on the service core. With lighter materials, the inventor suggests that the units, called nodules, could vary in shape. Instead of square or hexagonal plans with uniform heights, some nodules could be dome-shaped or even multifaced.



On-site fabricating yard could precast two-story housing units on an assembly line. Contractor casts concrete floor slabs on bar joists (left), installs plumbing fixtures, inserts prefabricated partitions between pairs of slabs, and adds exterior walls. Winches atop slip-formed tower raise paired units into place.

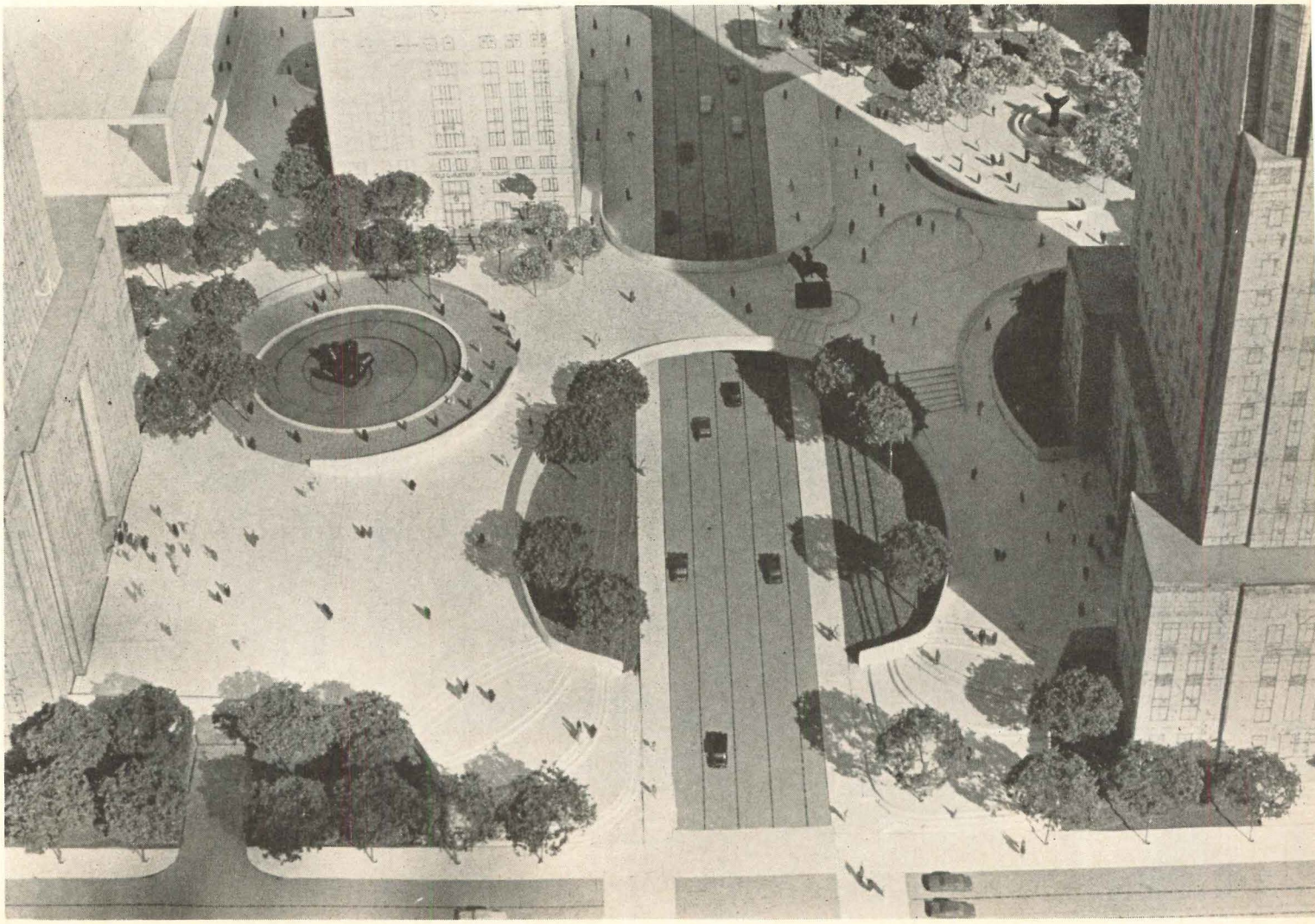
PIAZZA DI KANSAS CITY

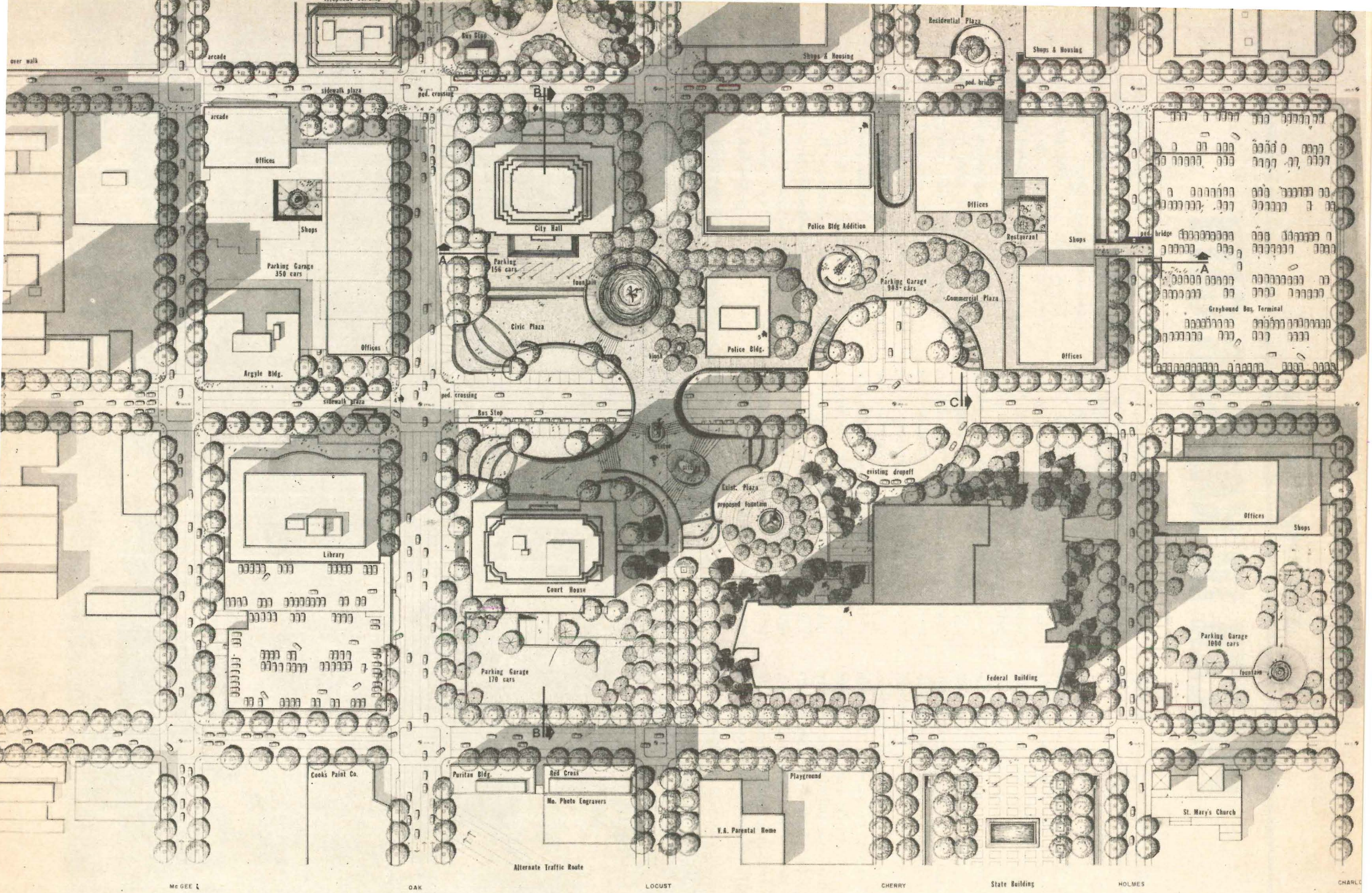
"Everything's up to date in Kansas City; They've gone about as far as they can go."

So go Hammerstein's lyrics from *Oklahoma.* As though fulfilling the late lyricist's words, Kansas City has revealed a master plan for its civic center area that is a considerable advance over the usual closed-off pedestrian street-shopping mall approach. The plan, by Lawrence Halprin & Associates of San Francisco, proposes the erection of a wide, curved, ramped structure that will bridge over traffic and tie together the major civic buildings of the city —City Hall, Jackson County Courthouse, new Federal Office Building, Police Building, and a library. The structure will create three connected plazas: a civic plaza in front of City Hall, a commercial plaza between the Police Building and office building, and an existing plaza near the Federal Building, which will be integrated into the plan. A block to the north of the civic center area, Halprin proposes a residential plaza near housing and shops. The plazas will contain fountains, sculpture, trees, grass areas and gardens, as well as such "street furniture" as benches, trash depositories, signs and lighting, and, of course, the ubiquitous information kiosk that seems to be unavoidable in master plans of this sort. Halprin says that, "Within these spaces, a whole life of the city, both day and night, could take place, with shops, restaurants, museums, theaters, and other activities such as ice skating, art shows—all elements that could make these spaces into a major focal center of downtown Kansas City."

Right now, just like practically every other American city, downtown Kaycee is dominated by cars, trucks, and buses. The planners started from the assumption that this traffic through the area had to be maintained and that storage for vehicles had to be provided in the over-all scheme. Garages will be located on the periphery of the central section (see site plan).

But the prime shaper of the design was the pedestrian. To provide him with "the amenity, pleasure, and dignity of the space as a civic symbol of Kansas City" was the goal. Thus, the upper pedestrian level be-





CIVIC CENTER MASTER PLAN

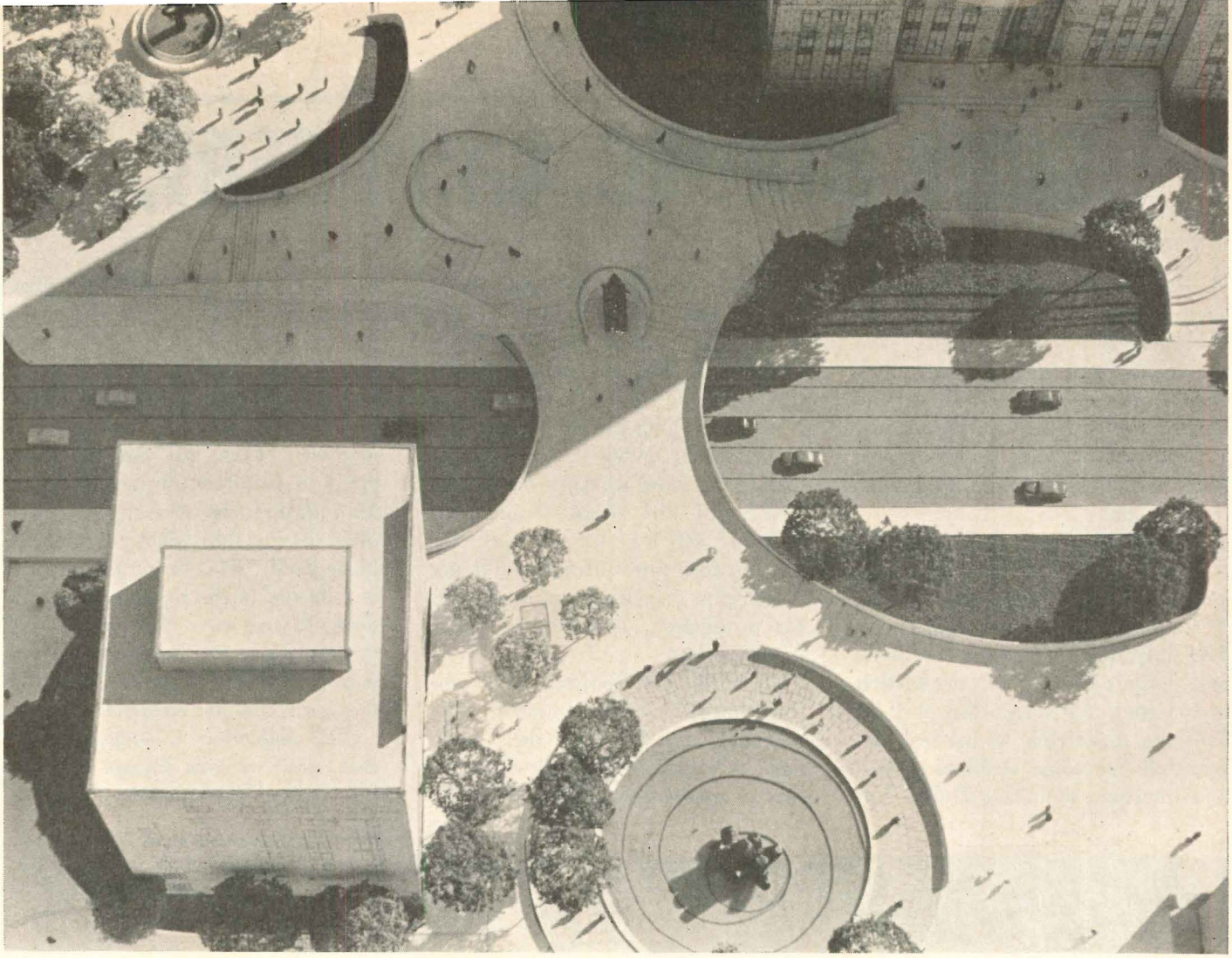
KANSAS CITY, MISSOURI

LAWRENCE HALPRIN & ASSOCIATES
LANDSCAPE ARCHITECTS URBAN DESIGN
1620 MONTGOMERY STREET
SAN FRANCISCO, CALIFORNIA

SCALE 1/32" = 1'-0"

AERIAL PLAN

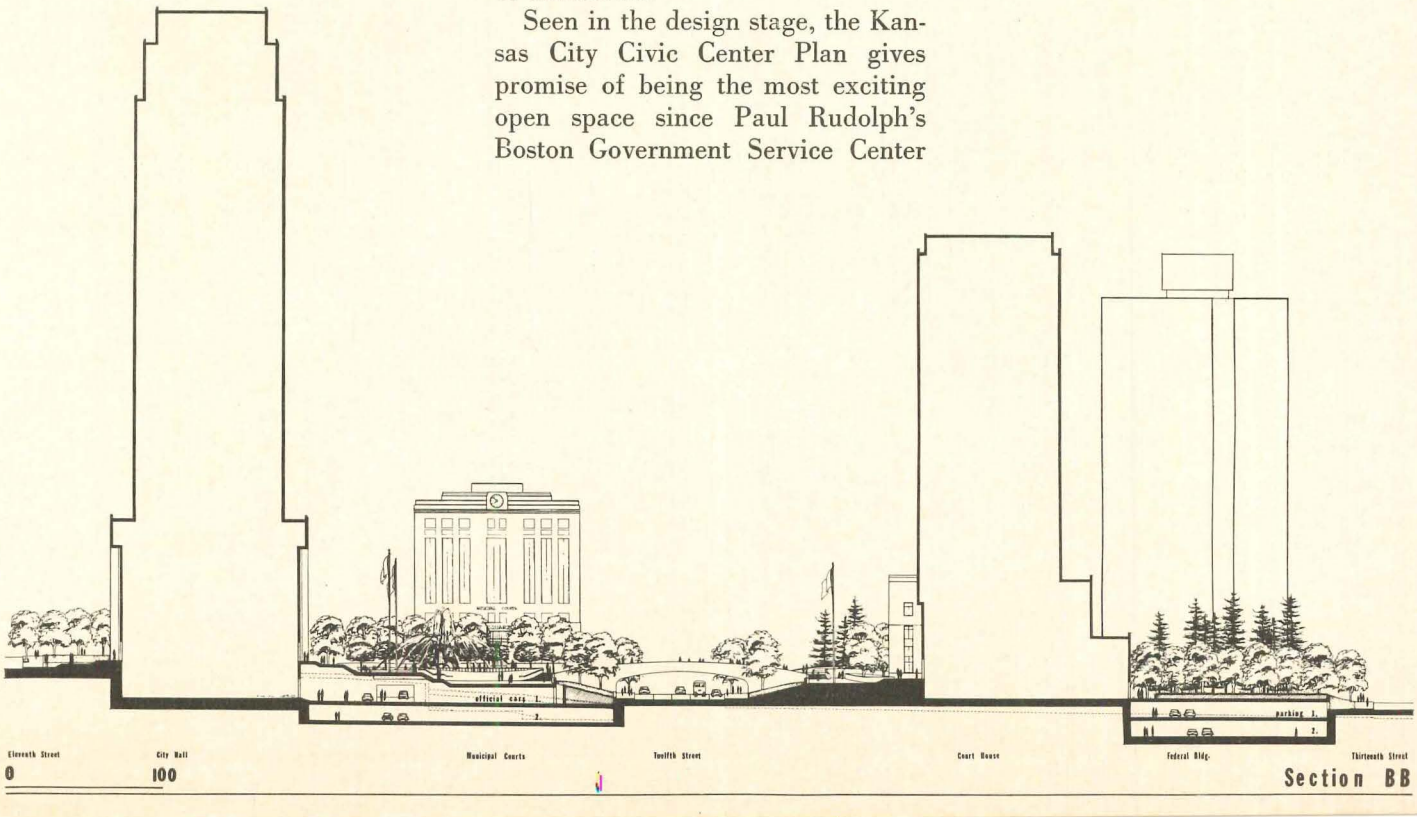
NORTH



came not just another slab over the street with concrete planters standing around on it, but (aided by variances in topography) an interesting, flowing series of steps, platforms, ramps, places for congregation, nooks for resting, and shady groves.

Halprin, who certainly knows how people move (see "Motation," pp. 126–133, JULY 1965 P/A), has based his entire plan of the plaza network on pedestrians and how they might be entertained, amused, refreshed, and generally given a little respite from the hectic atmosphere of downtown.

Seen in the design stage, the Kansas City Civic Center Plan gives promise of being the most exciting open space since Paul Rudolph's Boston Government Service Center (pp. 62–64, FEBRUARY 1964 P/A). It inevitably calls to mind such great urban experiences as Rome's Piazza di Spagna and Campidoglio. If some of that ambiance can be achieved, Kansas City will be a very up-to-date town indeed.



Section BB

WIRY, STRONG, SHIMMERY,

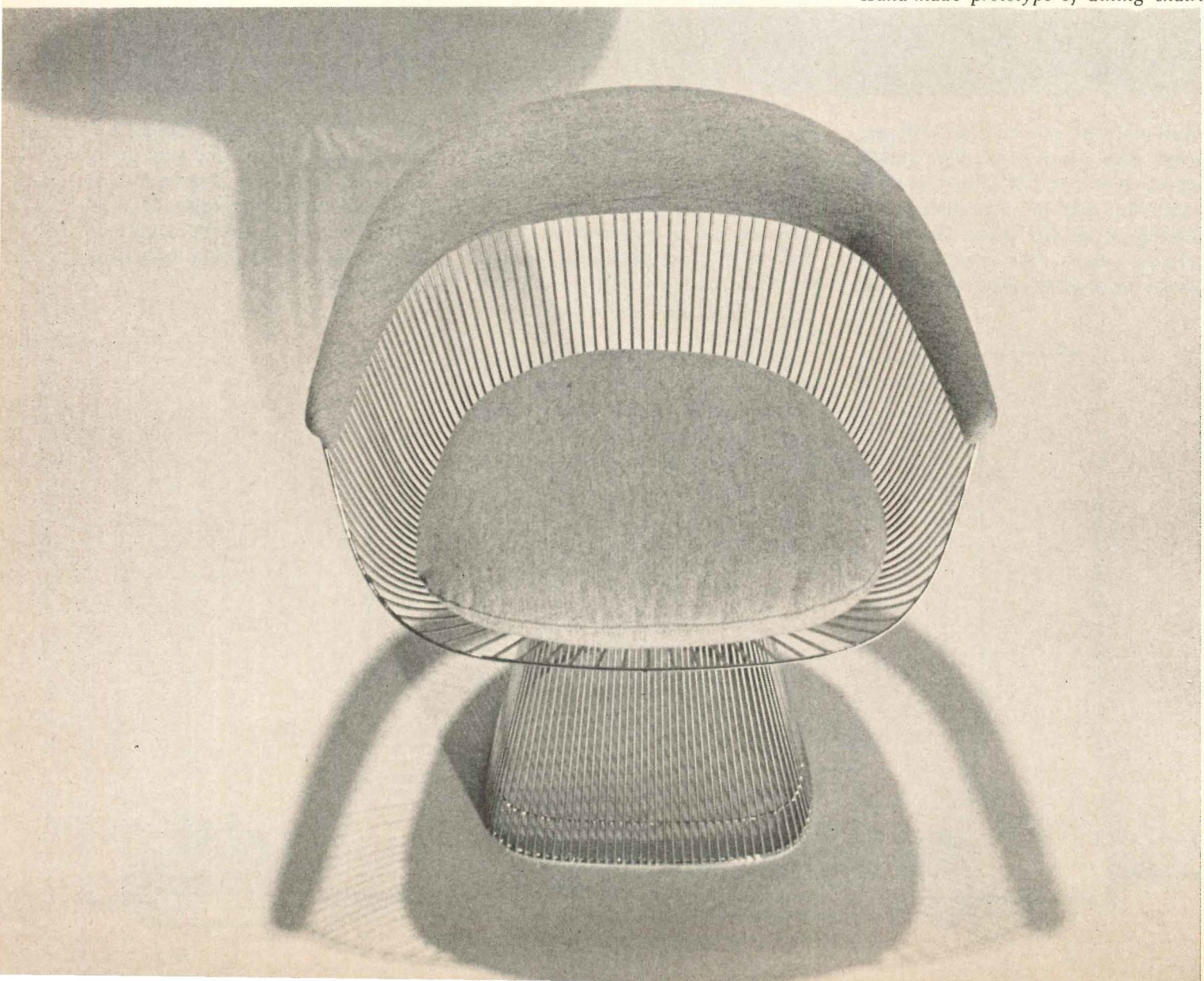
"I wanted a small-scale detail related to over-all form. This was the important thing—like people, who are forms with details: hair, eyebrows, noses, etc. I wanted the furniture to be all one form, not just a furniture of tops and bottoms, which is the usual thing," said Warren Platner.

He was talking to P/A about his new group of metal furniture, introduced by Knoll Associates at the AIA Convention a few weeks ago. The furniture represents Platner's first designs created for production in quantity. As a member of Eero Saarinen Associates, he has been responsible for some well-known custom interiors, including Dulles Airport, the London Embassy, Deere & Company, the Repertory Theater at Lincoln Center, Morse & Stiles Colleges at Yale, and, more recently, the Ground Floor Restaurant at New York's CBS Building (pp. 180–183, MARCH 1966 P/A). For the firm, he is now working on the interiors of the Ford Foundation Building. On his own—as with this line of furniture—architect Platner is working on several more designs for production, including an office furniture line.

In 1961, the designer began his investigation of welding metal wires to metal rings to create the "small-scale detail related to over-all form" that he wanted. A Graham Foundation grant in 1963, and the subsequent connection with Knoll for production, assured the furniture's going on the market. In noting the furniture-designing career of his late boss, also for Knoll, Platner commented: "Eero was not too interested in furniture design for specific interiors; he was always interested in the individual form of the piece itself." This form-making ideal is reflected in the present group; indeed, Platner says that his patented system of top and bottom rings with wires running between "makes both the form *and* the structure."

The collection includes a large easy chair, a sofa, lounge and dining chairs, an ottoman, and side,

Hand-made prototype of dining chair.



ARCHITECT-DESIGNED

coffee, and dining tables. The pieces are available in two metal finishes (except for the easy chair, lounge chair, and sofa, which may only be ordered in the darker metal): dark, patinaed copper oxide, and a silver-like nickel finish ("like white gold, really," according to Platner). The dining table can have a rosewood, teak, or walnut top; the coffee table and side table come with one of these or a glass top. Seating pieces are generously upholstered with foam rubber in thin fiber-glass shells set into the wire frames; under the seat cushions of larger pieces is a disc of heavy-duty rubber.

In addition to being shown at the AIA Convention, the pieces have been displayed in Toronto's new City Hall (they were hand-made in Canada for installation there). The latter installation (*see below*) shows what might be a drawback to the line. With its emphatic variation on a one-form theme, it could conceivably clash with busy interiors. It is this observer's opinion, moreover, that it woud be preferable to have one piece (or subgroup, as in the case of the dining-room furniture), to form an entity of its own without having to vie with members of its own family. When Knoll develops a dip tank large enough for the lounge chair to be nickeled in, for instance, it is going to be real gear with custom-leather upholstery. And the crystalline glass-topped coffee table is a splendid piece of functional sculpture right now. Despite the repetition of form and technique in the group, each piece seems to have its own personality. Architects will have to decide which ones appeal to them the most. —JTB

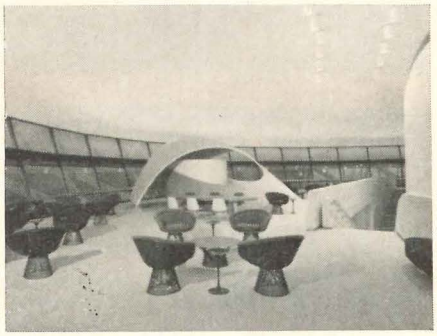
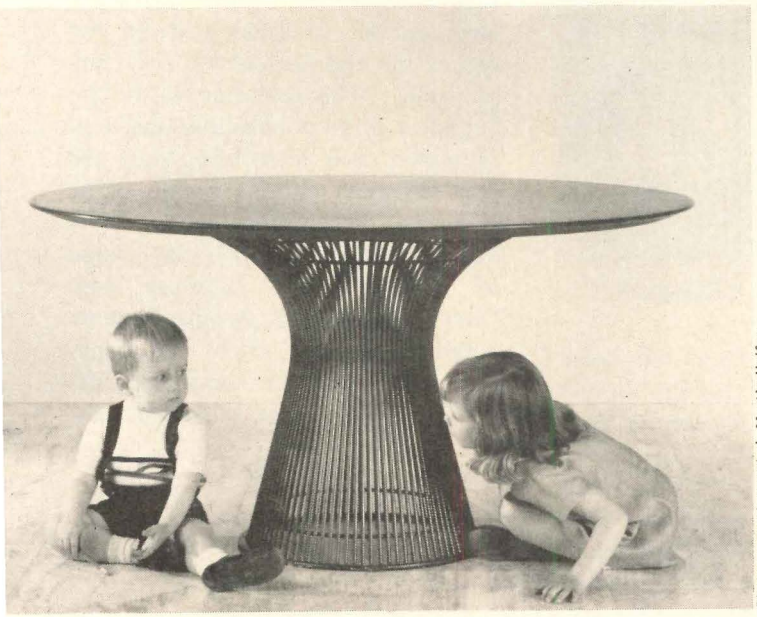
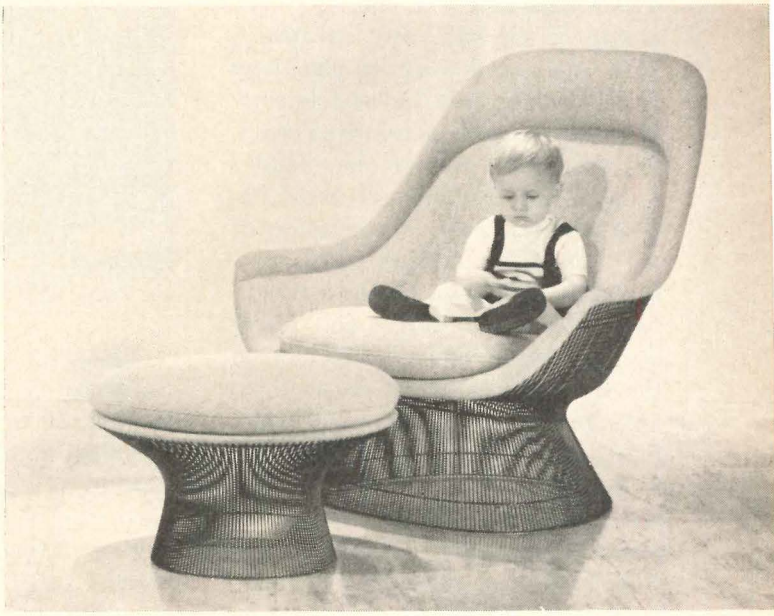
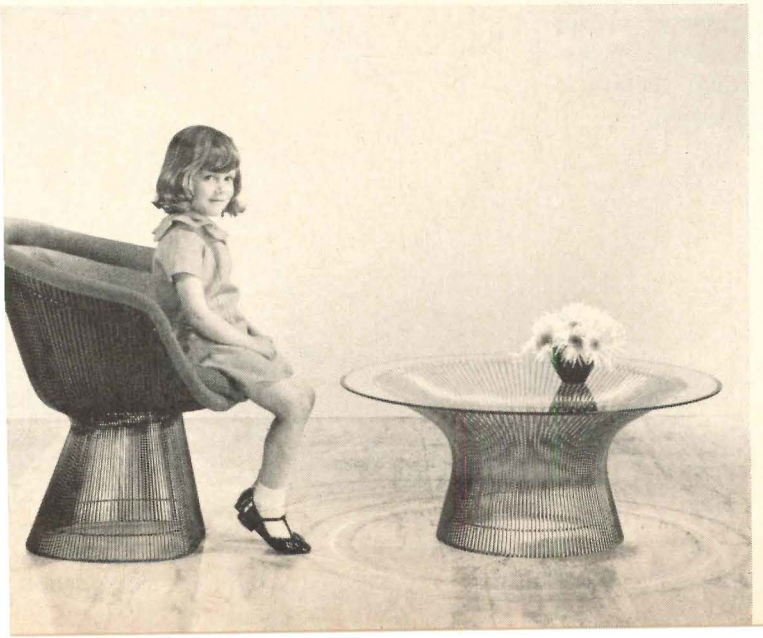


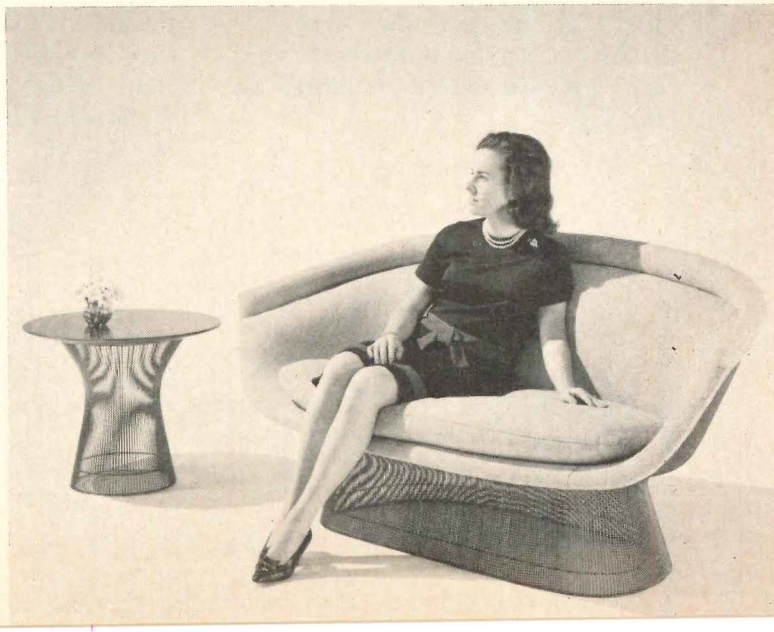
Photo: H. R. Jowett





Photos, except as noted: Martin Helfer

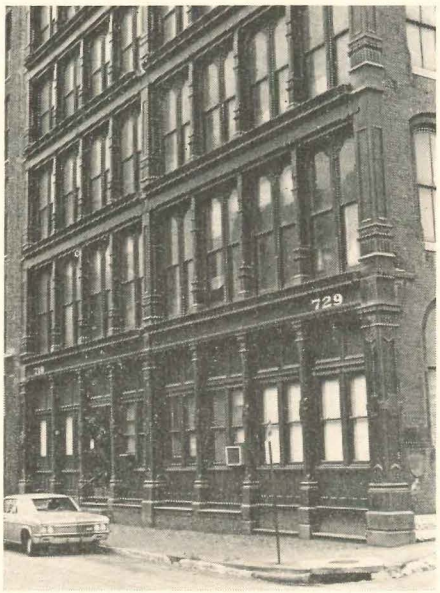




MEET ME AT LACLEDE'S LANDING, LOUIS

The disappointment of St. Louisans at the failure of their Gaslight Square area to become a distinguished example of preservation-*cum*-contemporary use planning has not prevented a new outfit, The Levee Redevelopment Corporation, from trying again on another site. Prospects for success in this case would seem more favorable, for the project has the advantages of a well-situated, definitely circumscribed site and the economic and aesthetic control of a single group.

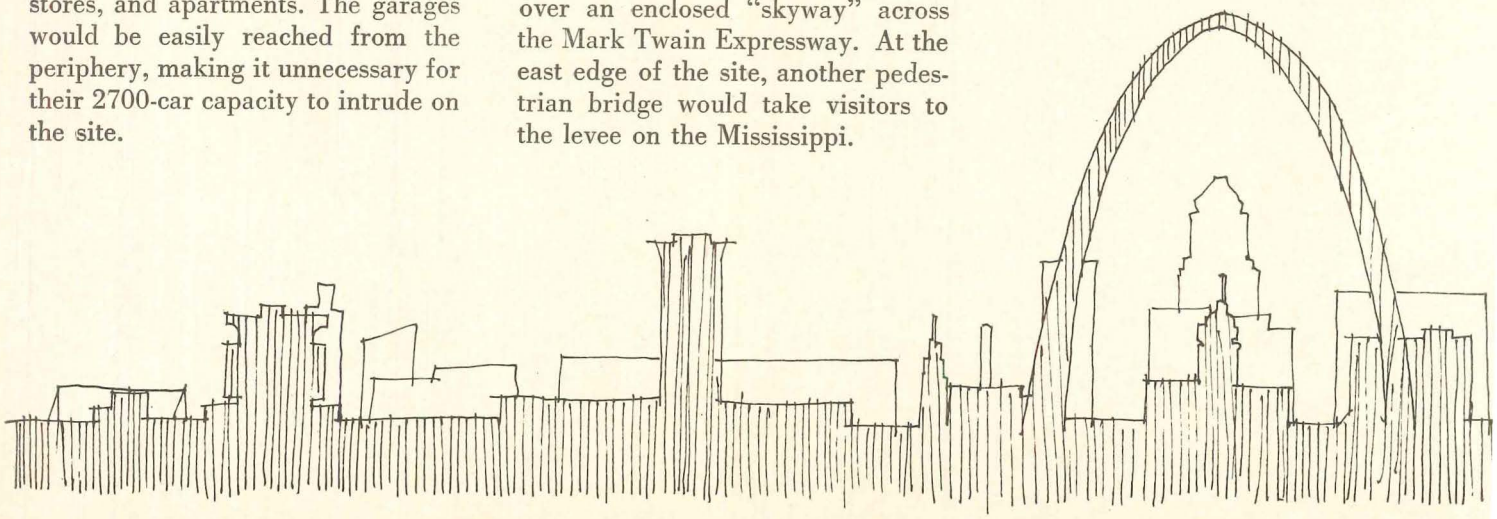
The site is just north of Saarinen's Jefferson National Expansion Memorial, between Eads Bridge on the south and Veteran's Memorial Bridge on the north, and the Mississippi River on the east and the Mark Twain Expressway on the west. The nature of the site, with its strong, hard edges and a street plan long frozen by the light industrial-manufacturing usage there for many years, has tended to preserve its identity as a prime collection of mid-19th-Century buildings. The purpose of the Laclede's Landing plan, prepared by Hellmuth, Obata & Kassabaum, Inc., is to revive and renew 70 per cent of the buildings now on the site (*right*) and to create three areas for new buildings by the demolition of structures considered unfit for restoration. The three major new structures proposed are point towers rising over parking garages ringed on the exterior by shops, stores, and apartments. The garages would be easily reached from the periphery, making it unnecessary for their 2700-car capacity to intrude on the site.



Accessibility to the development would be improved through simplification of the nearby traffic flow, including new entrances and exits, possibly a new tunnel off Veterans Memorial Bridge, and new intersection channelization. Pedestrians would reach Laclede's Landing over an enclosed "skyway" across the Mark Twain Expressway. At the east edge of the site, another pedestrian bridge would take visitors to the levee on the Mississippi.

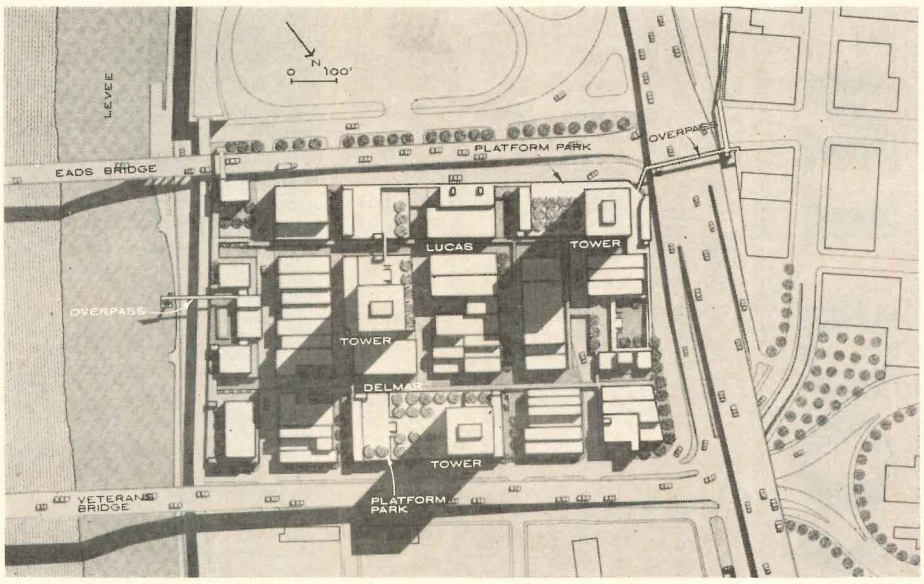
Separation of pedestrian and automobile traffic would be accomplished by making car and truck roads from what are now alleys, and by making First and Second Streets (north-south) and Lucas and Delmar Streets (east-west) pedestrian ways. Increased ease of pedestrian flow would result from creation of second-story elevated walks along Lucas and Delmar. The rather dramatic topography of the land, which falls from the expressway to the river in terraces formed by the main streets, would be preserved and enhanced by this traffic system.

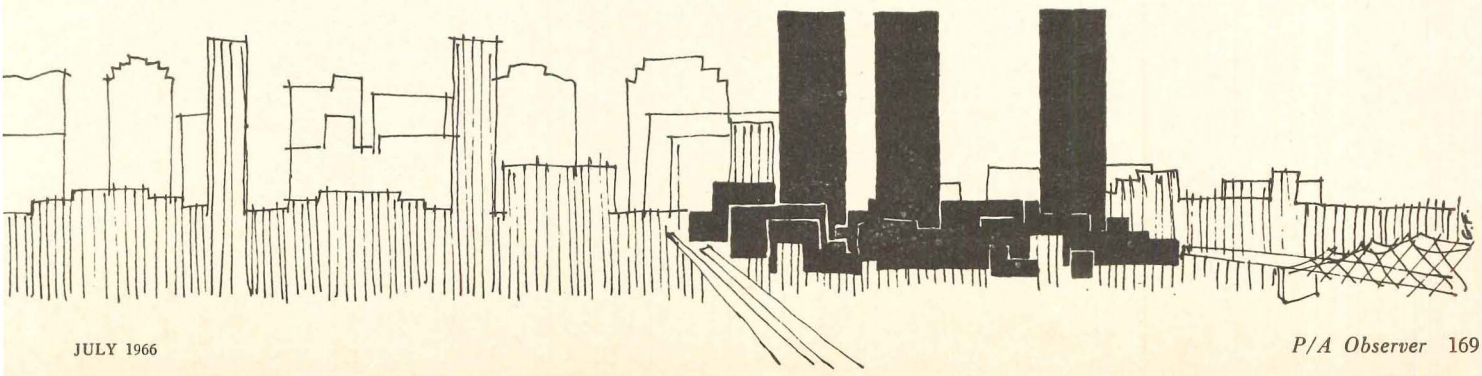
The owners and architects will have control over the aesthetic aspects of the development as well as its planning elements. Planting, signs, pavements, fountains, booths, and similar elements will be designed for appropriateness and compatibility. The program states that "signs shall be nonflashing and non-animated, and identifying only the establishment and the nature of its products. Also, they must all be suitably integrated with the design of the building." Lighting, too, "should be carefully designed and located to prevent glare. No floodlighting of buildings or streets will be permitted except by special dis-



pensation. Lighting emphasis is to be selective and ornamental, to highlight store windows, signs, entrances, pedestrian paths, statuary, water surfaces and other specific areas." Thus, the planners hope to avoid the honky-tonk atmosphere that has blighted Gaslight Square.

Laclede's Landing is a logical extension of the memorial area just south and other developments (Busch Stadium, office buildings, motels) around this burgeoning section of the city. St. Louis's rediscovery of its historic riverfront is to be commended. Executed with taste and tact, Laclede's Landing will add a substantial physical dimension to that rediscovery.





FROG INTO PRINCE

Located in the midst of what was once a typical drab-brick housing project on New York's Lower East Side, Riis Plaza, which opened in late May, has transformed the public housing surrounding it the way a maiden's kiss transforms frogs into princes. No longer are the Jacob Riis Houses typical—or drab. The Plaza, running for three blocks through the center of the project, gives the tenants what they have not had since they moved from their tenements: a place to congregate. But more than that, the carefully thought-out, pleasing design of the plaza will make them *want to* congregate.

There is something for everyone. For Grandma and Grandpa there is a semisecluded sitting area with benches, plantings, and a fountain surrounded partially by a 6-ft wall. For Mother, with or without the baby, there is an atrium with tall trees and an overhead wooden grillwork, open to the sky, where she can sit and chat. There is a sunken amphitheater, which can hold more than 1000 persons, for band concerts or puppet shows or plays on warm summer evenings. And for the children there is a remarkably alive play area, with running water, a shallow pool, a slide, things to climb on and through and over, a teeter-totter, a tree house, and an igloo-shaped fort. The sterility of most contemporary playgrounds is gone; although many of the structures are stone or concrete, the ground there is covered with sand, not asphalt.

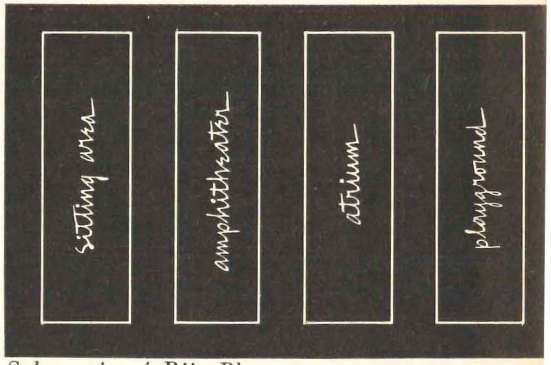
Perhaps most striking about the play area is the way forms flow easily and continuously into other forms, and the way traditional items, such as teeter-totters, are blended with exciting stone and concrete

Photo above and facing page: Maude Dorr

Photo: Ellen Perry

Photo: Ellen Perry

Lady Bird inaugurates it.



Schematic of Riis Plaza.

Photo: Maude Dorr

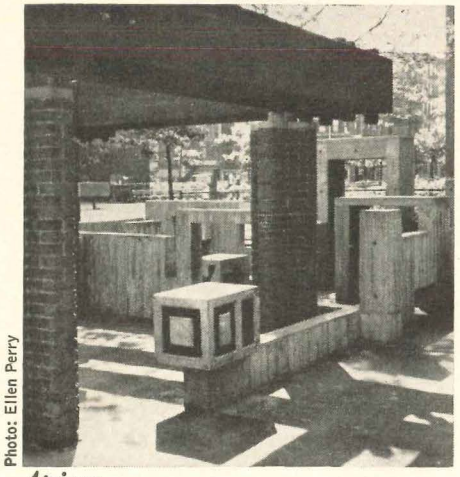


Photo: Ellen Perry

Atrium

shapes. Children seem instinctively to know how to use the area, where to climb, and what to do next. Climbing, running, and scrambling to get from, say, the tree house to the slide becomes half the fun.

When Mrs. Lyndon Johnson came to Riis Plaza for the dedication, it was filled with as much color and music and shouting as a Fourth of July picnic in Mishawaka, Indiana. Parents and children swarmed everywhere, wading in the pool, climbing on the structure of the atrium. No one stood around, just looking and saying how nice. It called for more than that.

Only one thing seemed unfortunate: The Plaza cost a million dollars to create. Even the Vincent Astor Foundation, which put up the money, could not be expected to make that kind of donation for every public housing development in the country. Yet that is just what someone should do.

Designers were Pomerance & Breines, architects, and M. Paul Friedberg Associates, landscape architect. —EKC

FOUR-IN-HAND-HOUSING

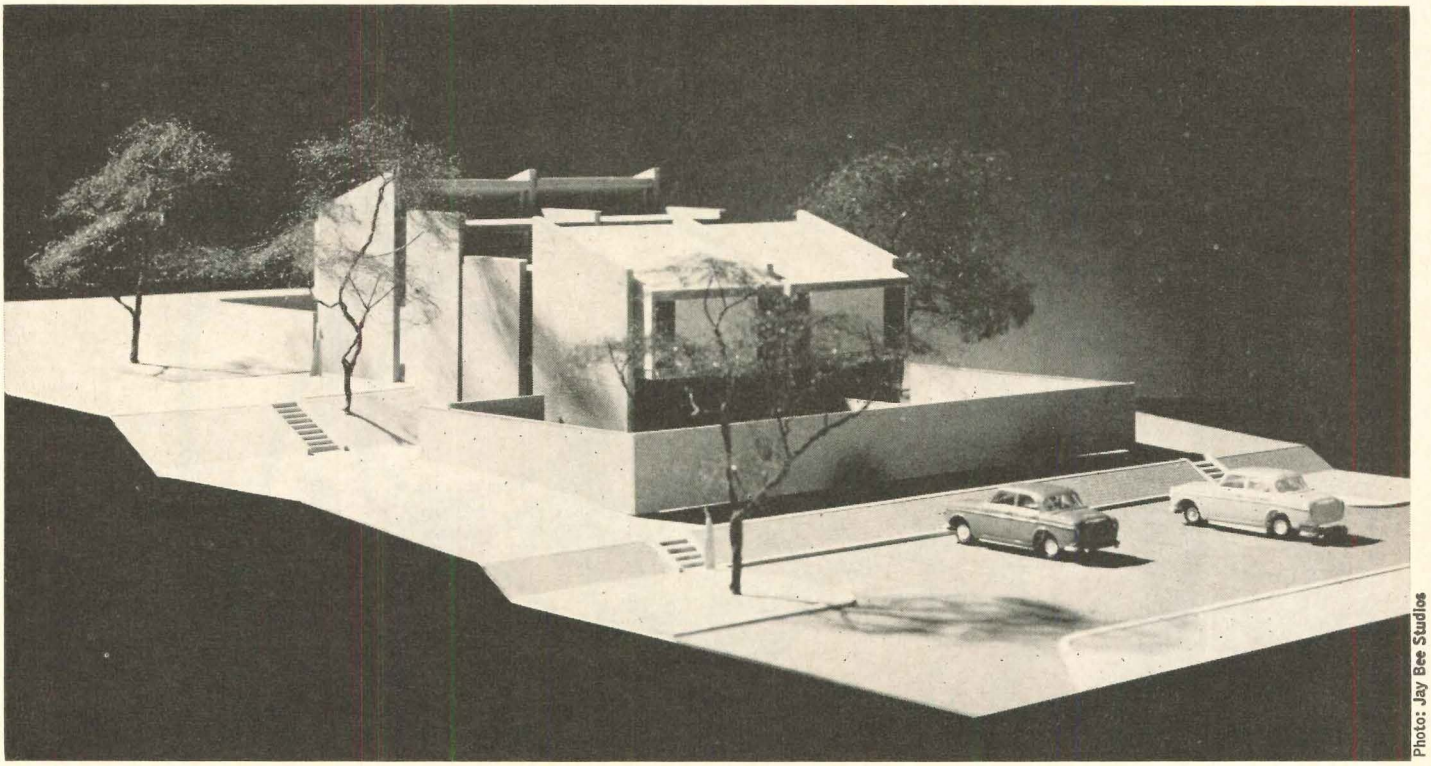
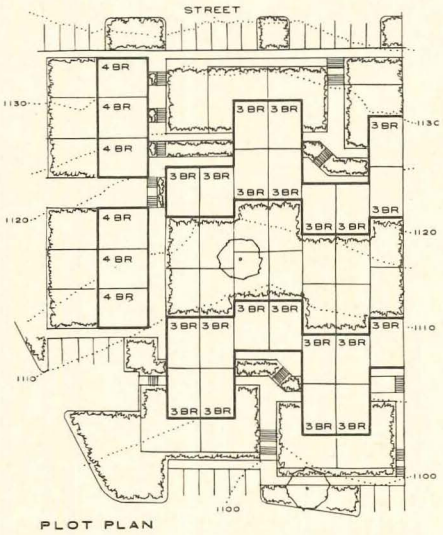


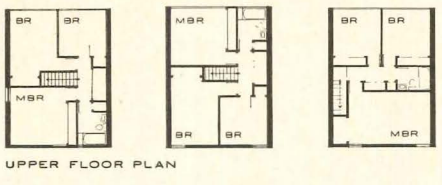
Photo: Jay Bee Studios

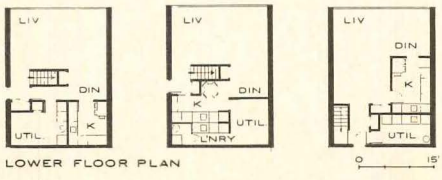
East Hills Park housing development in Pittsburgh, which a few years ago occasioned comment by announcing a number of plans by noted architects for its first elements (p. 63, MARCH 1960 P/A), then not using any of them, seems to be doing better by phase II—so far, at least.

Designed by Pittsburgh architect Tasso Katselas for ACTION-Housing, Inc. (that's Allegheny Council to Improve Our Neighborhoods, not the national group), the second phase will consist of a combination of low-rise garden apartments and town houses.

Notable in the design are some of the latter, designated "quadriplex" town houses presumably because they are two-story dwellings grouped in fours to share crossed interior bearing masonry walls. There will also be, according to the site plans, coupled units slid forward to share only a portion of wall with the quadrupled units. Each dwelling will look into its own enclosed garden, and 75 per cent of them will open beyond it to a common park uniting the whole area with proposed recreational and educational developments.







The three- and four-bedroom units will furnish about 1100 sq ft of living area, subdividable into several plans (those for three-bedroom quadriplexes are shown). According to Katselas, by slanting the tops of the masonry dividing walls, the roofs can be tipped, as the units mount the hilly site, to provide light to the smaller bedrooms. The whole scheme, as a matter of fact, will permit the units to follow the vagaries of the terrain to achieve an interesting silhouette for the community. Parking will be in small lots off major streets and next to each individual complex.

The quadriplex design is quite neat and logical in preliminaries. Whether the units will cause a little too much neighborly "togetherness" for some people's comfort will have to await completion for judgment. One might also question the over-all site plan of the townhouse area, which allows more generous gardens for some units than for others.

PICTURE OF AN ATOM

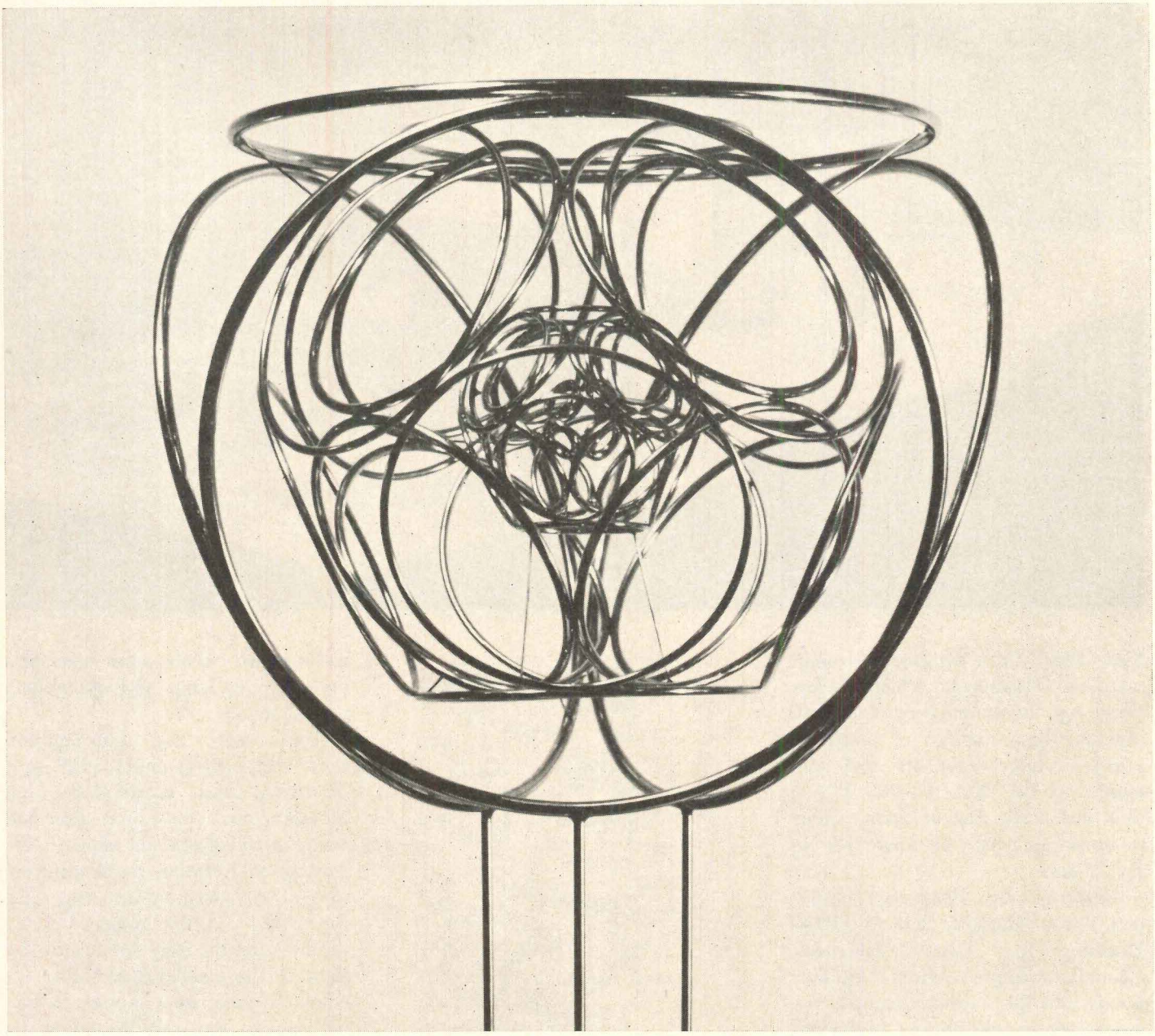


Photo: John Schiff

Two of the most interesting works of art at the late New York World's Fair were the glistening metal constructions at the Tower of Light pavilion by structural designer Kenneth Snelson (p. 52, JULY 1963 P/A, and p. 94, APRIL 1964 P/A). They were exercises in the relationship between tension and compression elements in discontinuous structures such as the ones seen here (*facing page*) outside of Snelson's studio on Long Island.

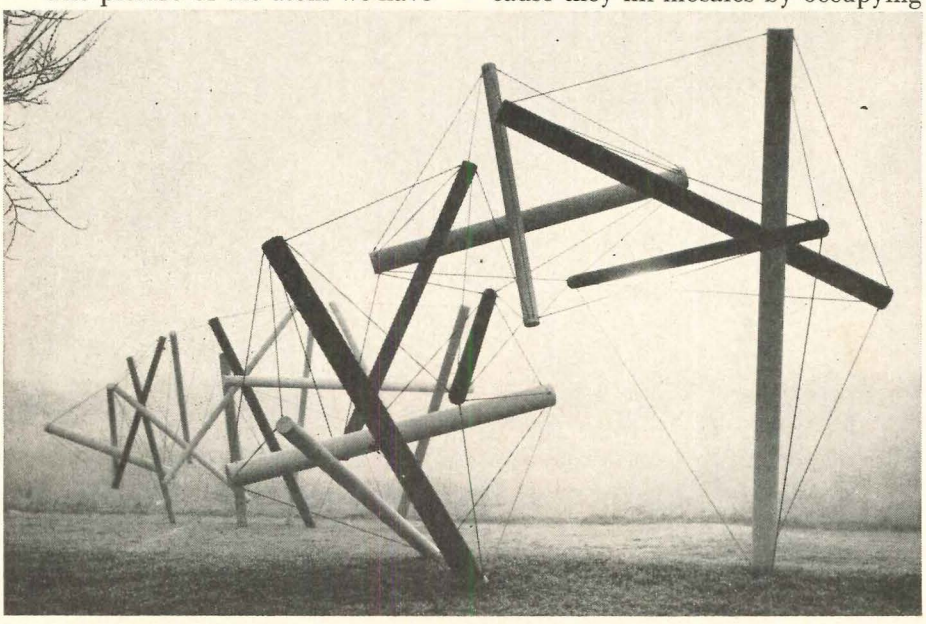
At a recent one-man show in New York's Dwan Gallery, Snelson's linear work was featured, but additional interest was provided by a few curvilinear pieces in which he is trying to achieve "a pictorial representation of the atom" (*above*). Intrigued by the aesthetic and structural aspects of Snelson's work, P/A sought him out, and gleaned the following observations:

Asked about the line of thought that lead from the straight-line works to the atom studies, he commented: "There are certain geometrical relationships between tension and compression elements in these discontinuous structures. The way I got the notion of the structure of the atom was by imagining that the geometrical arrays that are possible in the discontinuous structures were set in motion in an orderly fashion according to a logical system of rotation—right-handed things turning right-handedly and left-handed things turning left-handedly. I found that these relationships described spheres which had on them identical-sized

small circles on their surfaces. This came about in a very gamelike manner. What resulted from this game with forms is a discovery that there is a hierarchy of circle groups not greatly different from polyhedra except that they don't identify themselves as a whole list with specific polyhedra. Some are very random and peculiar circle groups. The ones that interested me were those that would permit themselves to be checkerboarded on the surface, so I could say, for example, if this one is white, none of the others around it can be white, they can only be red. This checkerboarding became a binary interest, enabling me to say that something has a yes-no, yes-no, or right-left, right-left, or, magnetically, a north-south, north-south quality. This is the way computers work. Certain of these circle sets had this binary property. I found some ceramic magnets polarized on opposite faces just as a current loop is polarized when you run electricity through it. Working with these, I found that the binary principle could be applied to magnets on the surface of the sphere, so that you could say that every adjacent magnet is of opposite polarity and finally you find that there are certain numbers of magnets that will form such closures. It was the identity of those special circle groups with the numbers that are found in the periodic table of electrons and shells that made me consider the possibility that maybe this was a reasonable model of an atom.

"The picture of the atom we have now is a very garbled one; there is no consistent picture existing through the different sciences. There is a magnetic atom, an optical atom, a chemical atom, a spectroscopic atom, but they are all different atoms. I feel these are quite arbitrary and essentially questions of convenience or even aesthetic judgment in some cases, about why something should be thought to be a certain way when there is no evidence whatsoever that it *is* that way. So I think I have a fairly consistent picture of an atom, although it cannot at this point do what scientists require of a model—that is, give them more satisfactory statistical data than they now have.

"This is a model of tellurium. It just happens to be that way; I didn't pick it because the name is pretty. It worked out as a way of showing the complete picture of what I was trying to say geometrically, with a tetrahedral exterior. This is the way I imagine electrons in motion—that is, with orbits—occupying this spherical field around the nucleus of an atom. What I am describing is the spatial and structural meaning of what are called electron shells. How the filling of shells by electrons takes place no one has ever known specifically; it is just known that a certain number of electrons build up in a certain fashion. The reason that I believe there is a validity to this is that it gives specific reasons why a certain number of electrons tend to organize themselves in certain numbers because they fill mosaics by occupying space in a certain way. Just as in building a building, you don't have room for a brick here, because there is already one in that place, so the next brick goes elsewhere. This isn't a fashionable way for physicists to think these days, mechanically; but you go one step higher, to molecules, and you have to be perfectly mechanical about it. My question is, what has an electron to do with the occupancy of space? My belief is that the electron in motion is the basic element of space occupancy. I think I have a logical tautology in this model that shows how electrons can occupy a shell simultaneously without interfering with each other."



How has this been received in the scientific community? "I have a letter from physicist Richard P. Feynman (who last year shared a Nobel Prize for reasearch in quantum electrodynamics) saying that this is not science, this is art. I have a letter from Donald H. Menzel, Director of the Harvard College Observatory, saying that the off-center orbits in the model don't *appeal* to him, meaning those that don't pass as a planet does centrally around the nucleus but rather occupy positions on a spherical surface. He goes on to say that he is a believer in the uncertainty principle. That's like a question of religion. So the objections to the model are that it is art, not science; that it is religiously offensive; and that it is aesthetically unappealing! It is a very strange thing, because science carries with it the aura of authority that is rather forbidding, and yet the reasons for accepting one thing or another are largely the question of the aesthetics of the theory.

"We are capable in the mechanical level of the world we live in of making a continuity of material which is like a frozen statement of an orbit. It is like an analogy. This is what I'm interested in—in creating things in space, or sculpture. It isn't simply to make an analogy with other kinds of structure, but it is making things that stay together because there are forces involved in them."

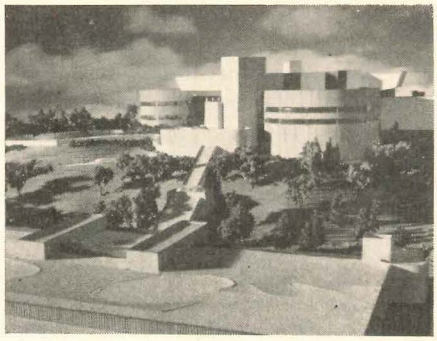
What can be done with the atom model now? "I'd love to have it commissioned as the entrance sculpture for a science center!" —BHH, JTB

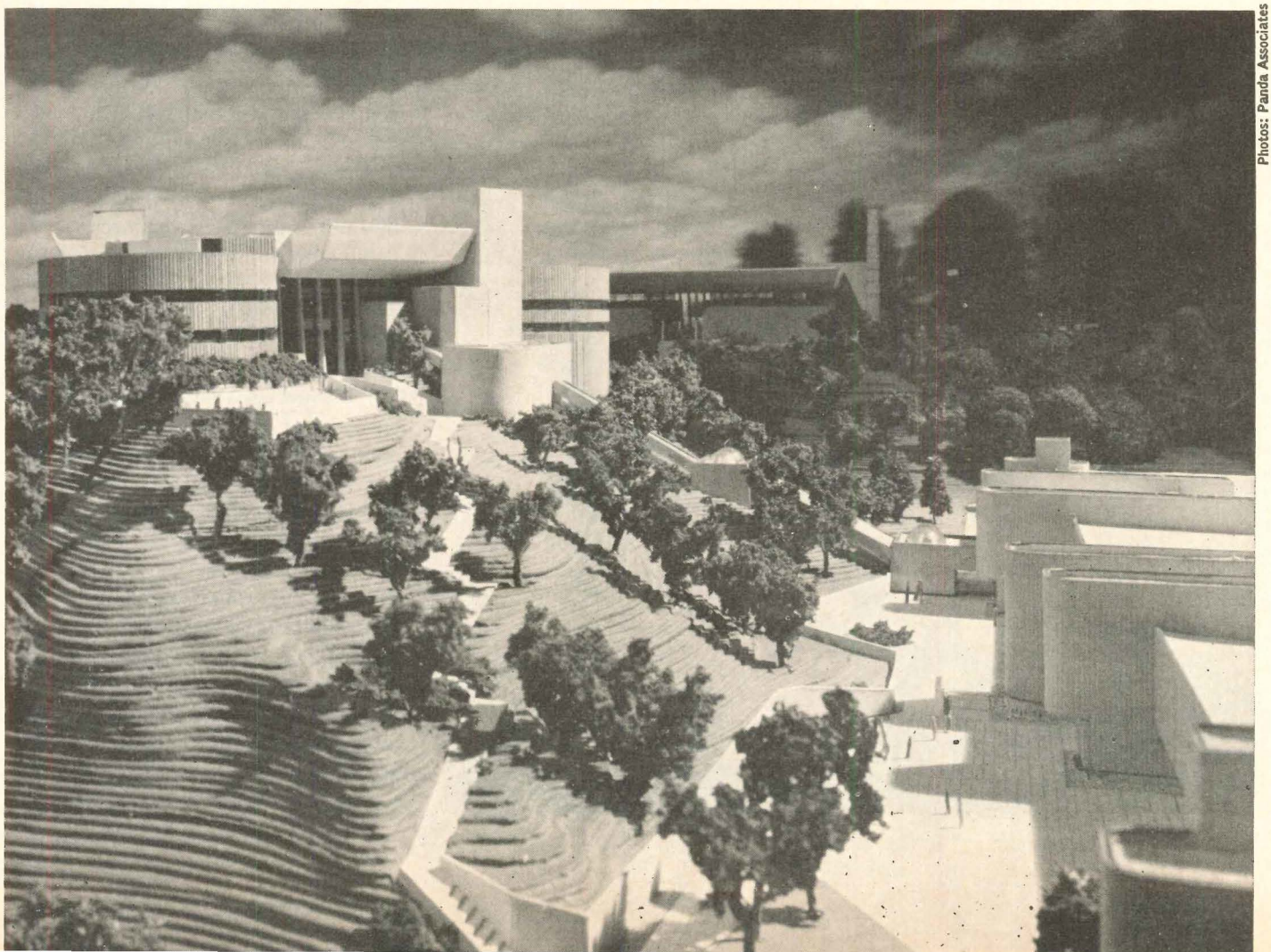
ONTARIO'S ENTRY

Although Montreal, with its Expo '67 world's fair, is taking most of the limelight for the forthcoming celebration of 100 years of Canadian nationhood, some of the other provinces are building their own structures to memorialize the event. Among the most significant is the Province of Ontario, which has under construction the permanent Centennial Centre of Science and Technology in Toronto.

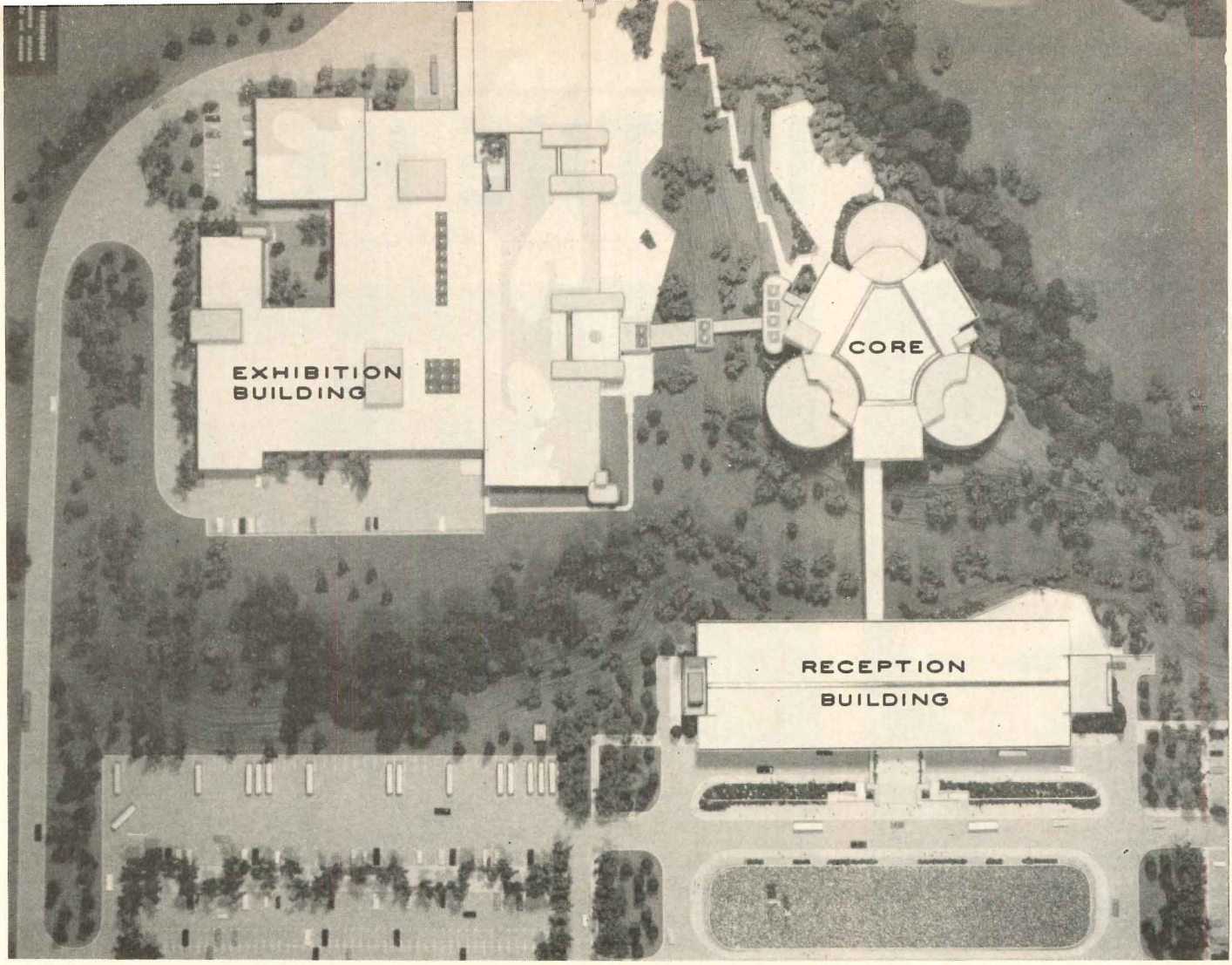
A flugelman for the center writes P/A that "it appears that the first stage of three buildings is going to excite as much interest as the late Viljo Revell's dramatic Toronto City Hall." That may be, but the design by architect Raymond Moriyama seems quite a bit less capriciously self-conscious than the City Hall. Forms it does have in abundance, and, in the "core" building, they might prove somewhat contrived, but the over-all impression does not now seem inappropriate to what will be a group of public buildings in a public recreation and education park.

The three buildings in the first stage—being built on and in a rugged ravine site next to the Don River—are the reception building, the "core" building, and the structure housing exhibition halls and related facilities. The reception building is sited on "table land" off Don Mills Road, a major thoroughfare, and is flanked by large parking lots depressed 10 ft below grade. There are separate upper and lower entrances for adults and family groups and for larger school groups. The separation is carried on to the two-level bridge that connects with the core building. Here, the triangular "Great Hall," in reality a control rotunda, is high-lighted at each corner by a circular wing containing a 500-seat auditorium, an education center, and administrative offices and two revolving theaters. Descending to the valley floor via escalators, the visitor finds the museum building housing exhibits, conservation labs, registrar, curators, collections, the library, design section, and workshops. Since the roof of this building will be its most visible aspect from above, it will be patterned in four compatible shades—charcoal, brown, ochre, and white—of Ontario aggregate. Main exhibit





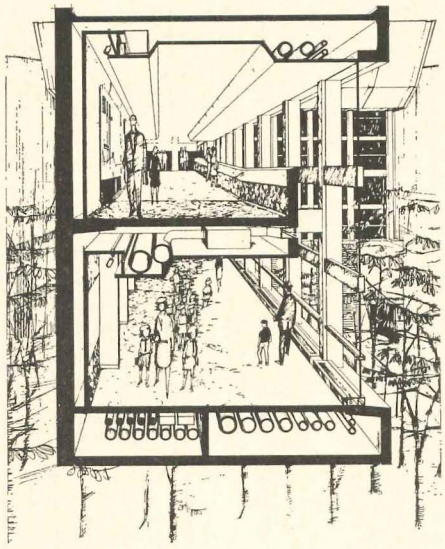
Photos: Panda Associates



spaces are three halls of 20,000 sq ft of floor space, designed inside for "absolute negative architecture," according to Moriyama, in order to let nothing detract from the exhibits.

Exterior facilities in the park will be planned and controlled by Moriyama. They will include some sedentary spaces and also active areas including an open-air theater, artificial ski slopes (who would think they were needed in Canada?), skating rink, children's play area, shelters, and a ski chalet. Tying in with the science and technology theme of the entire project, large mechanical devices such as parts of turbine engines and locomotives will be introduced as displays and "sculpture."

Exterior and interior walls will be precast concrete panels bushhammered to reveal local aggregates. Standard width will be 5 ft, with heights ranging up to 30 ft. Balustrades, balconies, and some walls will be cast-in-place concrete showing patterns of rough-timbered formwork (to be finished by sandblasting in some instances). The 250-ft-long, two-level bridge between the reception building and the central building will be partially post-tensioned, prestressed concrete and partially reinforced concrete; it will be glazed on the side overlooking the ravine.

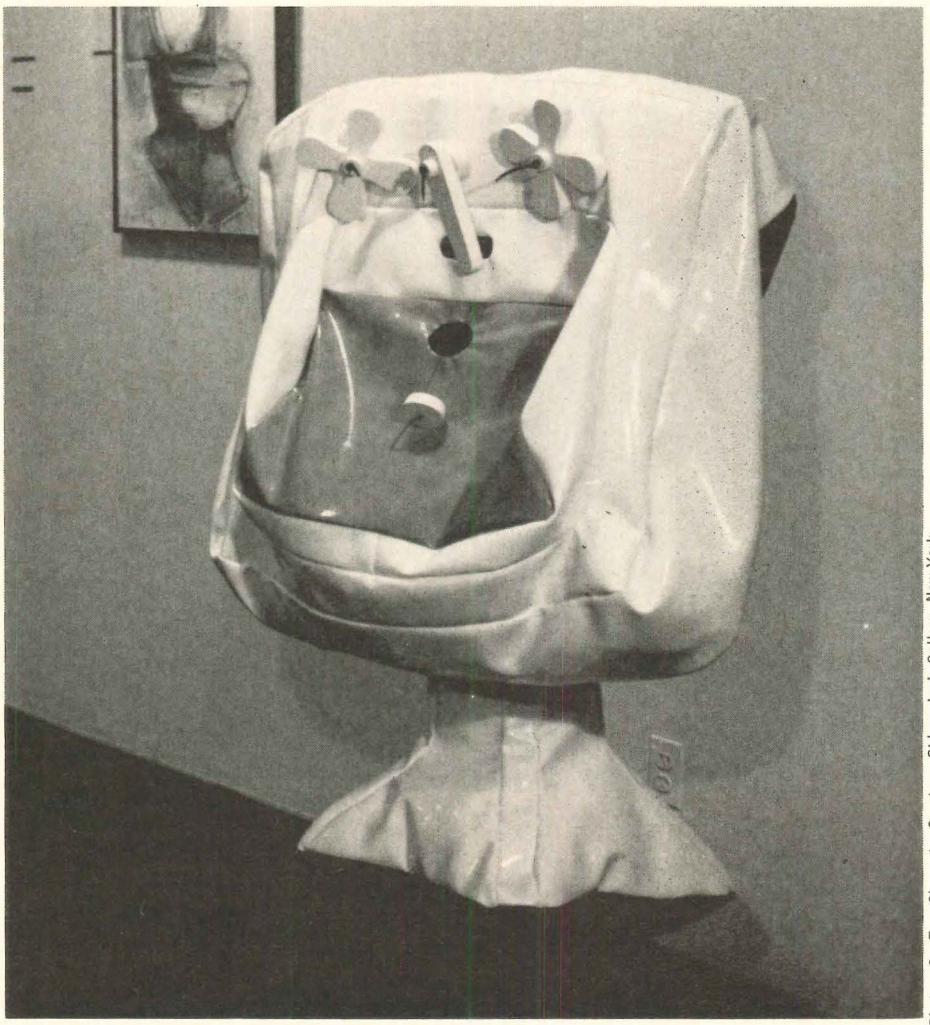


Section of two-level bridge.

Moriyama's design, despite the circles-on-triangle strain of the central structure, is a more appropriate environment for science and technology than Yamasaki's anachronism at the Seattle Civic Center or Harrison & Abramovitz's romantic concrete-and-glass grotto left over from the New York World's Fair. Whether we are now suffering the birth pangs of a new age of science or the death tremors of an old age of technology, the Ontario complex should be able to maintain its self-respect for some years to come.

Owner: *Government of Ontario.* ***Department of Public Works Chief Architect:*** *D. G. Creba.* ***Project Architect:*** *Raymond Moriyama.* ***Structural Engineer:*** *M. S. Yolles Associates.* ***Mechanical Engineer:*** *Nicholas Fodor & Associates.* ***Electrical Engineer:*** *G E. Mulvey Associates, Ltd.* ***Soil Consultant:*** *William Trow & Associates.* ***Site Development and Landscaping:*** *Raymond Moriyama.*

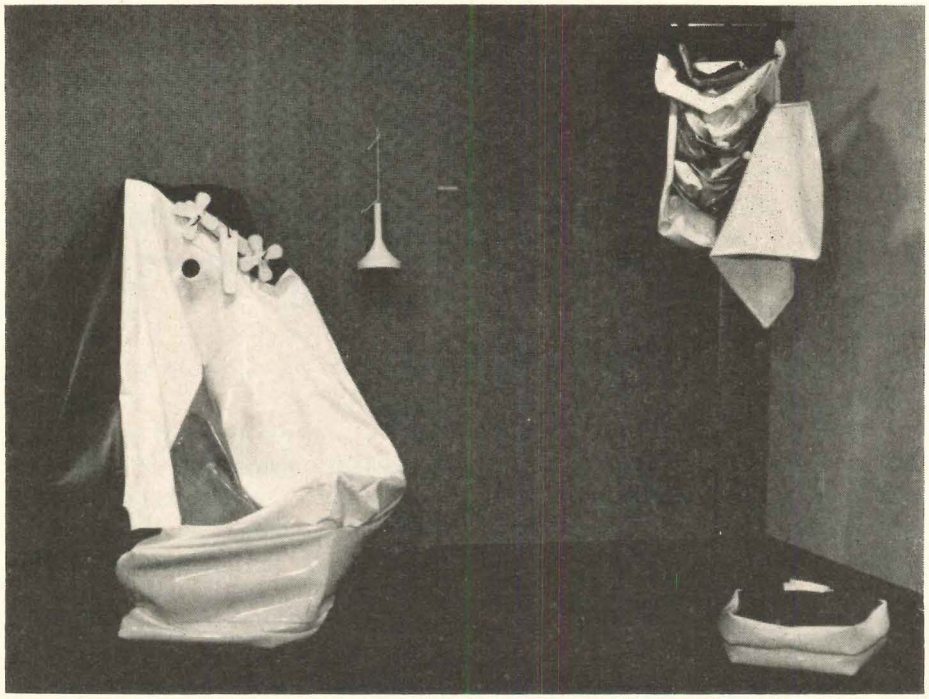
SOFT IN THE HEAD



Photos: Geoffrey Clements; Courtesy, Sidney Janis Gallery, New York

Hard on the heels of publication of *The Bathroom*, by the Cornell University Center for Housing and Environmental Studies (p. 63, JUNE 1966 P/A), came a one-man show of the work of Claes Oldenburg at Sidney Janis's Pop-Op gallery in New York.

Prominent in the show was a complete set of bathroom facilities fashioned in vinyl, plexiglas, and kapok called "Soft Toilet," "Soft Washstand," "Soft Bathtub," etc. These headpieces—"head" in the nautical sense—are presumably just as much a comment on the American's penchant for spending much of their time in the bathroom as are the discoveries of Cornell's Professor Kira. Hopefully, they will not have as much of an influence on the future design of these facilities.



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For more information on this new PITTCO framing system, see Sweet's Architectural File, section 3a/Pi, or write for our 4-page descriptive folder. Pittsburgh Plate Glass Company, Pittco Architectural Metals Department, Ohio Street, Kokomo, Indiana 46901.

*Performance test data published March 1, 1965, by Pennsylvania State University.

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MECHANICAL ENGINEERING CRITIQUE

CONTROLLING AIR IN HYDRONIC HEATING SYSTEMS

BY WM. J. McGUINNESS

A dual-purpose pump circulates hot water and keeps air out of a heating system. McGuinness is a practicing mechanical engineer.

An air-separating system that keeps air out of a hot-water heating system after it has been manually purged, is a recent step in a long line of developments that contributed to the predominance of hot water over steam for heating buildings.

About 20 years ago, forced circulation hot-water heating systems supplanted one-pipe open steam systems in houses and small buildings. Soon after, hot water became more common than steam in large buildings, and for district heating at campuses, airports, and small communities.

For residential use, the tide turned when the perfection of the one-pipe principle in water systems made them economically competitive with steam. Before that time, the simple, rugged steam system offered many advantages, including dependability and low cost. When hot-water heating stole the show, it brought many new advantages, including smaller piping, level pipe runs, fast response, ease of control, and adaptability to zoning.

Steam had not been without shortcomings, and hot water also brought some of its own disadvantages. Prominent among these was the trouble caused by air in the system, and the subsequent difficulty and cost involved in purging it.

Air can make heating elements sluggish or inoperative. Its presence in pipes causes undesirable sounds, sometimes referred to as "hydraulic mice." One trouble area is in pumps for circulating hot water through a heating system. In the centrifugal impellers of the circulating pumps, water is thrown out dynamically into the volute, and this displaces air that collects at the center, or "eye," of the impeller. At this location, the bearings and pump seals need the lubricating and cooling effect of water, and, without it, can become worn and damaged.

Manufacturers have been active in research to improve system components, and to promote good engineering design. One company, Bell & Gossett Hydronics, has perfected an air-separating system that solves the air problem completely.

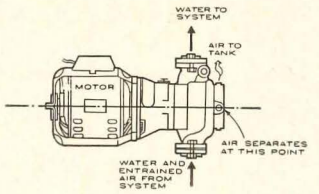
This separation principle keeps the piping, boiler, convectors, or other heating elements permanently free of air after the initial manual purging. This the manufacturer guarantees, providing the installation conforms to his specifications. The separating device makes it unnecessary to periodically open vents at high points to exhaust trapped air. The air is automatically carried back to the boiler and delivered to the compression tank, where excess air is relieved through the excess air valve.

The air-separating device, called an air-control booster or circulator, serves two purposes. It doubles as an air-separator and as a circulating pump (see illustration). The circulator's impeller throws water circumferentially, and passes the air axially to the tank. This special booster, if one of several, must be placed closest to the boiler discharge, and on the zone having the largest flow, hottest water, and most frequent use.

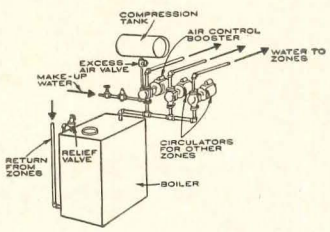
The compression tank is the essential pneumatic cushion that absorbs fluid expansion due to temperature change, and prevents unnecessary periodic operation of the relief valve. Initially, there is always plenty of air in the system to fill the tank, and incidental entrained air in the water keeps the tank completely full.

The tank is always full of air down to the excess air valve, unlike former tanks, called "airtrols," that were half full of water. For this reason, the new tanks can be smaller than was previously required.

The cost of the installed air control booster, with its smaller tank and excess valve, is nearly the same as the cost of installing a conventional circulator with a larger tank and "airtrol" fittings.



Air-control booster separates air from water at the "eye" of the centrifugal impeller.



Air-control booster takes air from boiler and make-up water and delivers it to compression tank. Valve discharges excess.

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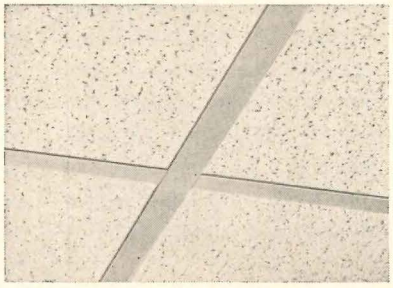
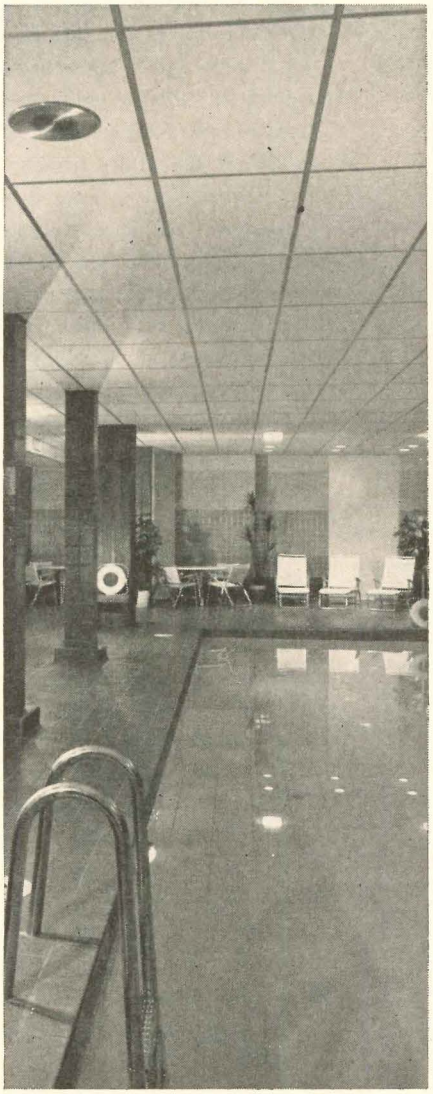


We didn't.



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SPECIFICATIONS CLINIC

TIME TO CHANGE THE TECHNICAL SECTION?

BY HAROLD J. ROSEN

A discussion of improved methods of organizing the technical section of specifications, and the possibilities of tailoring its language for computers. Rosen is Chief Specifications Writer of Skidmore, Owings & Merrill, New York.

The content of the technical sections of specifications seems to have been shaped more by the exigencies of a situation than by a thoughtfully calculated approach to the subject.

Until recent years, little thought has been given to the organic structure of a specification. Drawings, by their very nature, must show the interrelationship of all the parts. Why, then, do we separate the various parts of the specifications into technical sections? Is it for the contractor? For the subcontractor? For the materials supplier? Or for whom and for what purpose?

These questions need to be reexamined. We must also recognize, however, that our buildings are becoming more complex, available materials more numerous, and construction techniques more sophisticated. How do these problems relate to the structure of specifications? What role will the computer play, if any, in solving some of these problems?

If we are to uncover new solutions, it might be well to scrutinize past and present practices in specifications writing. A handbook on specifications, written in England in 1860, shows that the specifications were then structured around the crafts or tradesman. A contractor usually engaged all the crafts directly. There were few, if any, subcontractors; the specifications were therefore directed to the work performed by tradesmen. The sections were aptly entitled: Excavator, Bricklayer, Carpenter, Plasterer, Glazier, etc. The specifications sections described work that these craftsmen or guilds performed and the contractor was truly responsible for hiring them and coordinating their activities.

Specifications written around the end of the 19th Century took another turn. Around that time, specialty subcontractors were on the building scene, and general contractors engaged them. Specifications were written on the basis of three major divisions: Masonry, Carpentry, and Mechanical Work, with various allied or related subjects subsumed under each section. Masonry comprised concrete foundations, excavation, masonry, waterproofing, steel columns, lintels, and tile-work. The Carpentry section included roofing, glazing, and painting as well as carpentry. The mechanical or pipe trades consisted of plumbing, gas, and heating work. When electrical power was developed, electrical work was included in Mechanical Work.

Other Routes To Follow

Present specifications are being written on the basis of combining certain elements so that the general contractor can award each part, and maintain a single responsibility for the section. This happens with curtain walls, integrated ceilings, or other complex systems.

But for some applications, there may be a better way to write specifications. If, for example, drawings show sealants for expansion joints in paving, for joints in precast architectural concrete, for metal curtain walls, or for glazing systems, should we specify the material and its application in each technical section to obtain a single responsibility? Similarly, if insulation is shown for insulating the perimeter of concrete foundations, for insulating an exterior masonry wall, or for roof insulation, should we specify the material and its application respectively under concrete, masonry, and roofing?

Should architects attempt to dictate how a contractor subcontracts his work? On many occasions, the contractor may elect to combine sections into a single subcontract. In other instances, he may exclude work written into one section and award it separately.

Tailored for Computers

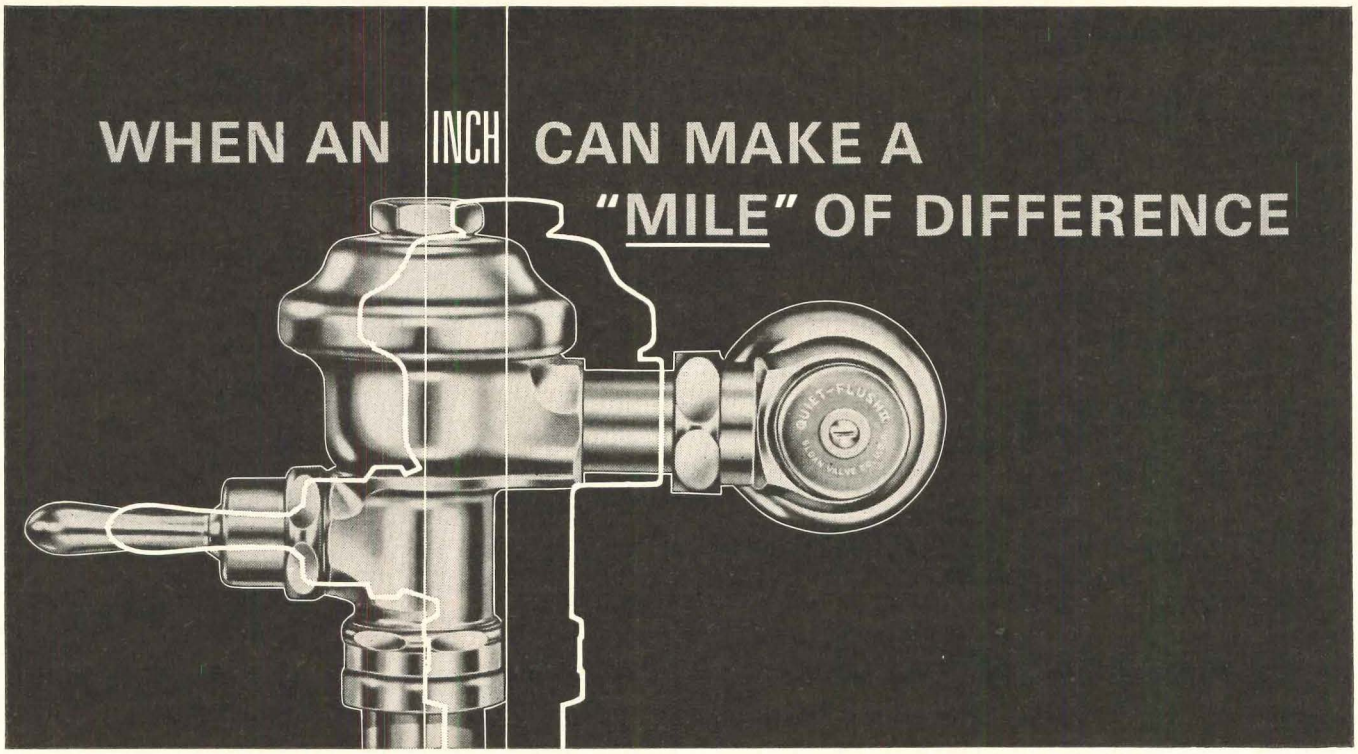
If we are to take advantage of computers for storing the increasing volume of words, materials, and methods of construction, we must seek systems for encoding this information so that it can be retrieved in more usable form.

What form should this input of information take? If master specifications are to be prepared for the various sections, it would seem that smaller, less complicated and less all-inclusive technical sections would be best adapted for computer applications. The more variables that are included in a technical section (such as for a curtain wall), the less manageable the system will become.

A curtain wall section would have to include all types and kinds of metal framing, metal panels, glass, insulation, flashing, and sealants. A master specification for such a technical section would be almost beyond formulation. However, if the component parts were written in separate sections, the multitude of materials and methods of installation could then be encoded in a computer. If the architect required a single responsibility, he could specify this requirement in his General Conditions.

Building insulation could be specified by type in one section of several sections. Sealants could be specified in one section. Instructions could be introduced elsewhere for the amalgamation of the various parts into the single responsibility.

Perhaps the answer to the growing complexity of building construction and specifications writing lies in a reevaluation of the structure of specifications. Perhaps the answer may be in the writing of specifications sections based solely on specific materials and installations. These could be in short, concise formats adaptable to the computer. The technical section need not necessarily be written for a subcontractor, but for a material and its installation. It would be interesting to obtain comments on this proposal, and they could be incorporated in a subsequent article.



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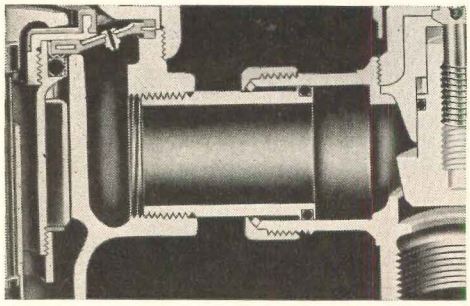

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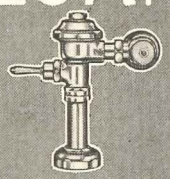

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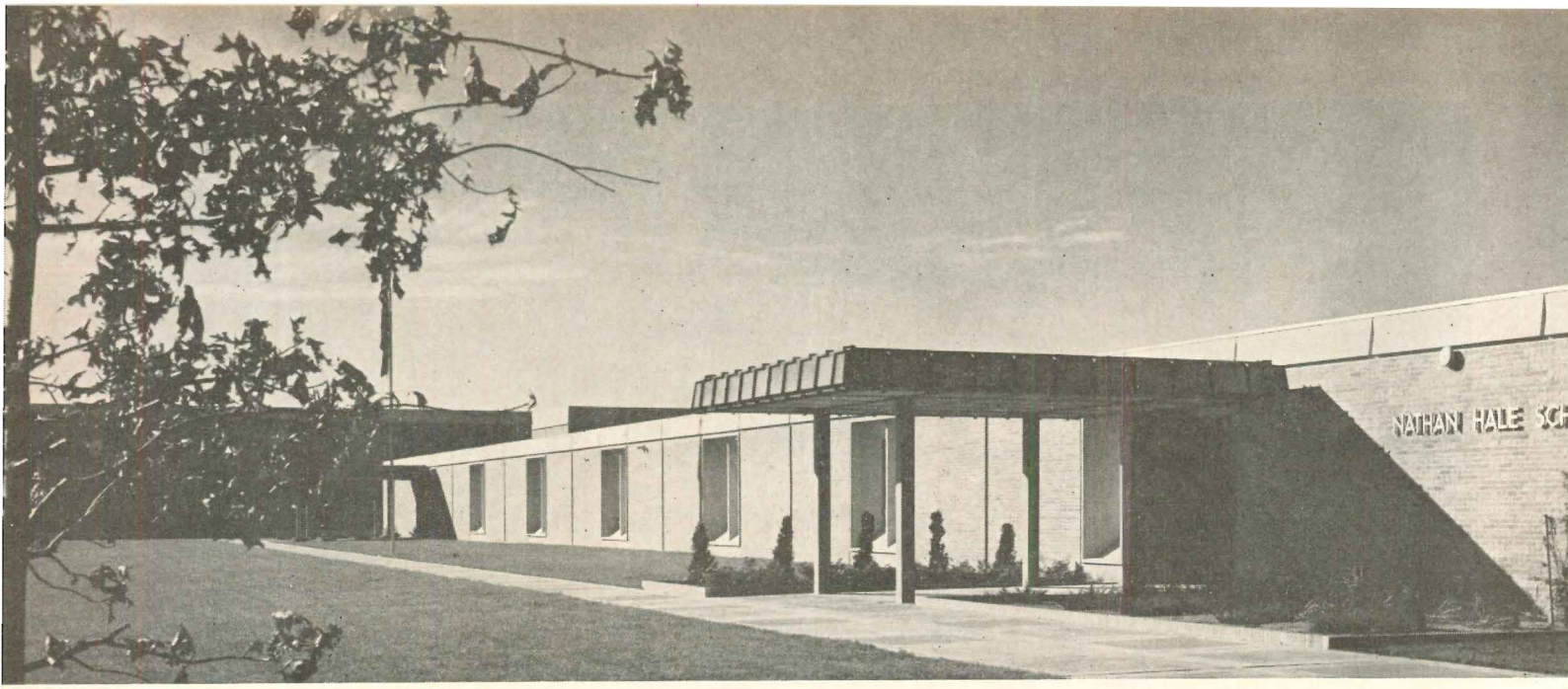

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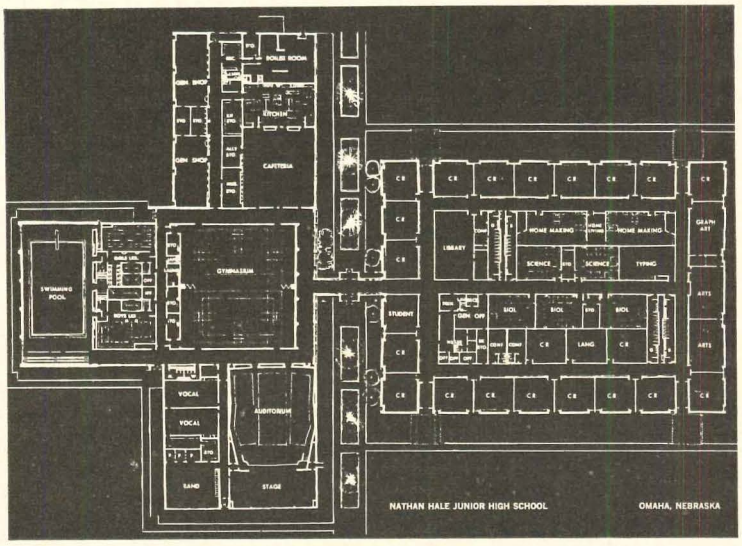

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IT'S THE LAW

INFRINGEMENT OF COPYRIGHT: PART II

BY BERNARD TOMSON AND NORMAN COPLAN

In the second of two articles, P/A's legal team conclude their discussion of a recent Massachusetts decision that extends an architect's protection against infringement of copyright beyond that afforded by earlier decisions in other states.

In last month's column, we discussed a significant case in Massachusetts (Wood v. Skene) involving an architect's claim that his plans had been "pirated." The Massachusetts court pointed out that there was in this matter no precedent in Massachusetts, and little precedent elsewhere. The publication of a literary or other artistic work, unless it is copyrighted under the Federal copyright statute, gives the public a license to use such work, and the creator loses what is known as his common law copyright in it. This is true of architectual plans as well. The primary issue before the Massachusetts court, therefore, was whether the architect's plans, which had been copied by a third party without compensation to the architect, had been "published" so as to deprive him of his common law copyright. (The term "publish" in this context is a term of art, indicating such actions on the architect's part resulting in a surrender of his property right in his plans.)

A few decisions have held that, when plans are filed, the common law copyright of the architect is lost. Other cases have ruled that the architect loses his common law copyright to his plans when the project is constructed and exposed to public view. The Massachusetts court rejected both of these views. It pointed out that only a general publication terminates a common law copyright. Such a publication consists of "a disclosure, communication, circulation, exhibition, or distribution of the subject of copyright, tendered or given to one or more members of the general public, as implies an abandonment of the right of copyright or its dedication to the public." A limited publication, which will not divest an architect of property rights in plans, is "one which communicates a knowledge of its contents under conditions expressly or impliedly precluding its dedication to the public." The Massachusetts court pointed out that, under Federal cases dealing with literary and similar works, the courts recognize "that there may be a fairly substantial but limited distribution of material susceptible of statutory copyright without putting the material in the public domain and without forfeiture of the author's common law copyright in it."

The Massachusetts court rejected the holdings of two New York cases that ruled that the filing of plans constituted a general publication. The court pointed out that, in the New York cases, as distinguished from the case before it, there was no agreement between the architect and his client that the ownership of the plans should not pass to the client by virtue of the commision. More significantly, however, the Massachusetts court rejected the concept that the filing of plans constitutes a general publication, stating:

"There is no basis for concluding that, by filing with the Woburn officials, Wood (the architect) made manifest any objective intention to publish the plans generally. . . . On the contrary, the protective clause in Wood's contract with Moylan (Owner) indicates that the intention was to preserve Wood's common law rights in them. The sole reason for the filing of the plans was to procure official approval of them. The filing was a publication to but a single entity for a limited purpose. . . . It must be clear . . . that the principal objective of Woburn (municipality) in compelling a filing is to insure that the public will be protected from unsafe construction. . . . There is no indication that a second and unrelated objective, one to compel an architect to divest himself of the fruit of his labor as a condition precedent to obtaining a building permit, is within the purpose of the filing requirement. . . ."

The court concluded that, while filed plans may be copied to determine whether a building will comply with zoning and safety laws, they may not be copied to permit architectural plagiarism.

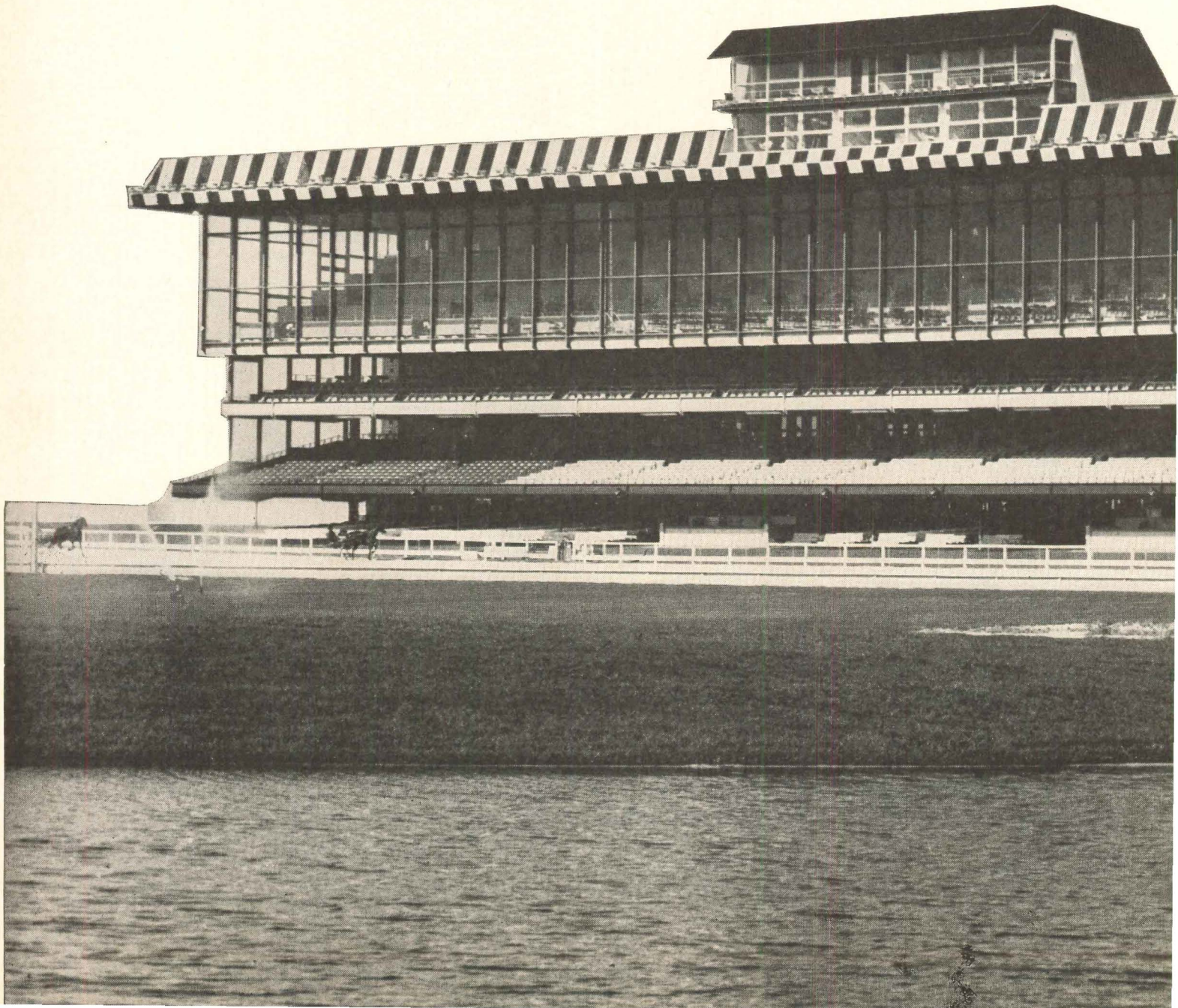
Having rejected the New York rule that filing of architectural plans constitutes a general publication, the court next was required to deal with the issue of whether the construction of the project and its exposure to the public constituted such general publication. In determining this issue, the Massachusetts court stated:

"The fact that a building is built from the plans and is open to the gaze of the public . . . may be a publication of the general design or idea of the building but not a publication of the exact plans whereby another may without effort other than that of tracing the work of the architect completely duplicate the latter's effort. . . . An architectural plan is a technical writing. It is capable of being copied only by similar technical writings, that is, by other plans, etc. A structure is the result of plans, not a copy of them. It follows that building a structure and opening it to public gaze cannot be a publication of its plans. We do not suggest that a common law copyright in the plans is infringed by a drawing made from observation of the interior or exterior of the buildings. . . . On the other hand, the right fully to reproduce plans is a far more substantial aid to a builder unwilling to pay for architectural services than the right to make sketches or drawings of a completed structure.

"We thus hold that the construction of the building from the plans constitutes no publication of them at all."

The decision of the Massachusetts court, which extends the protection of the architect beyond that afforded by earlier decisions in other states, is, of course, welcomed by the architectural profession. Whether, however, other states will allow this determination is uncertain.

Here's a grandstand built with an air spoil to hold down the roof. And J&L Junior Beams to hold down the cost.



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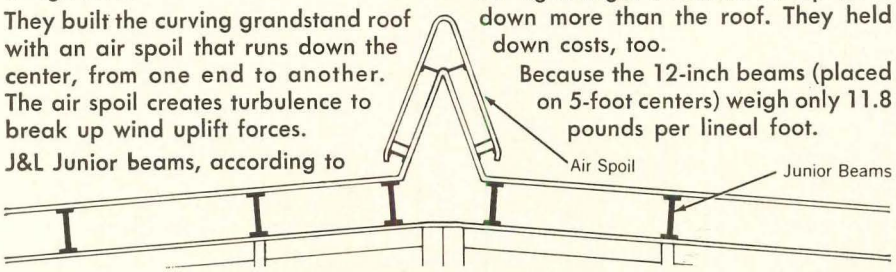

Section showing use of Junior Beams in roof deck, and design of air spoil.

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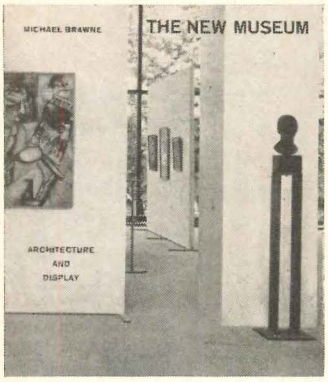
A ONE-EYED AESTHETE

BY A. E. PARR

THE NEW MUSEUM: ARCHITECTURE AND DISPLAY. *By Michael Brawne. The Architectural Press, London. Distributed by Frederick A. Praeger, 111 Fourth Ave., N.Y., N.Y., 1966. 208 pp., illus., $20. Reviewer is Senior Scientist at The American Museum of Natural History in New York City.*



The New Museum adds another copious but extremely unbalanced picture album of excellent black-and-white illustrations to the meager reference materials available for the sedentary occupation of museography. A most casual leafing through the pages immediately reveals the one-sidedness of the offering. Of the 41 examples chosen for the full treatment, 35 deal with subjects or objects that here and in many other countries are considered to fall within the sphere of the arts: archeological, primitive, folk, decorative, and fine arts. This leaves only five establishments to represent the "new museum" in all other fields: history, science and technology (including transportation in all its forms), natural history, education, and others.

That the art museums have gained the center of the stage cannot be denied. That they rightly belong there forever is, in my opinion, also true. But the disparity in status and performance between art museums and "new museums" is not nearly as great as the figures from this book would suggest, and one who undertakes to publish what purports to be a report on the genus "New Museum" as a whole has a moral obligation to offer a reasonably judicious balance of contents.

In recent years, we have seen two startingly different and succesful new museums of natural history. The new zoological museum of the University of Copenhagen, the largest, entirely new unit of its kind built in the 20th Century, reverses a tradition reaching back to the origins of museums by placing the exhibits in a two-story "attic" while devoting all its "main" floors above ground to storage, research collections, and laboratories. The Museo de Flora y Fauna Nacional in Mexico City spreads its offices and exhibits through five large, interconnecting, quake-proof hemispheric domes, while providing enjoyably relaxed spatial forms for the contemplation of the displays inside. Neither of these striking expressions of progressive thinking are included among the examples in *The New Museum,* which limits its treatment of the entire field of natural history museums to one single museum that is "no more than a small barn." A splendid design for its limited purposes, this minute establishment has not had to seek the answer to any of the problems facing its urban sister institutions and cannot, therefore, contribute to their solution.

The neglect of the Mexican contributions is perhaps the most unfortunate feature of the selections for this book. Recently, no less than five new museums have opened in the Mexican capital, every one a bold departure from existing prototypes, and each totally different from the others in its direction of departure. Whether or not one likes the results of any of these daring experiments, the presence of all five within a single community makes Mexico City today the most exciting capital in the world for students of museum design and methods. One of these museums has already won worldwide acclaim as an achievement that may never be surpassed. None of the five is included in *The New Museum.*

Science and technology receive only perpiheral representation by a fine Swedish museum of forestry, and the provocative new Commonwealth Institute in London. One misses, among others, the successful museum of the automobile in Turin, the tremendous advances embodied in the reincarnation of Deutsches Museum in Munich, and the new Museum of History and Technology in Washington. These omissions cannot simply be ascribed to the element of time, as the book makes a full presentation of two museum projects not yet completed. The bias of the sample selection is strongly evident in the general discussion preceding and following the album section where not a single sentence is devoted to the particular problems, needs, and devices of other than art museums. This prepossession also affects the validity of the reasoning advanced on general issues.

The display of the "real object" is affirmed and reaffirmed as the overriding mission and justification of museum existence. More than 50 years ago, it was recognized that there is an essential difference between museums of science and museums of art: The purpose of the former is to present ideas and illustrate them with examples, while the latter is dedicated to the exposition of the unique qualities of concrete objects. In art museums, "the real thing" is the true object of communication; in the science museum, the objects are highly valued accessories of the communication process, but still only accessories for which other objects may be substituted without loss of purpose as circumstances require. Of what use would a microbe or a real jellyfish be in a museum exhibit? Even such a solid and substantial member of the anmal kingdom as a cod is not likely to contain a single molecule of "the real thing" when put on display.

Ignoring science museums in a book ostensibly on the "new museum" also slants the discussion of flexibility in museum architecture. It is difficult to disagree with Brawne's statement that it is the totality of the museum experience "which becomes an event in its own right and within this totality, architecture, as space manipulation, must of necessity assume a positive function." But this is not the point. Because the objects on display in art museums are as durable both in substance and significance as the quarters intended to hold them, the architectural container can, and should, be permanently fitted to the immediate contents for which it is designed.

Continued on page 198

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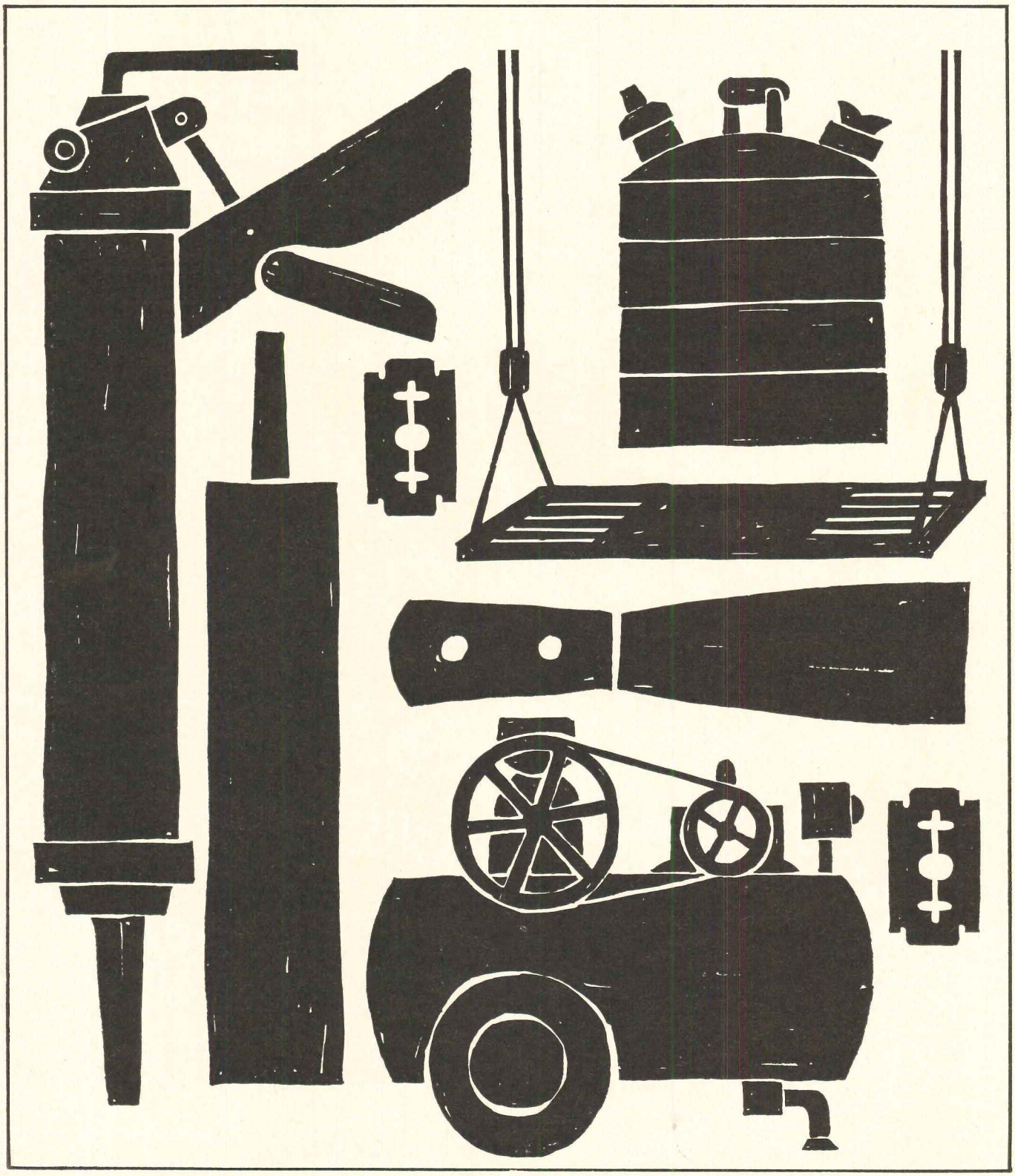

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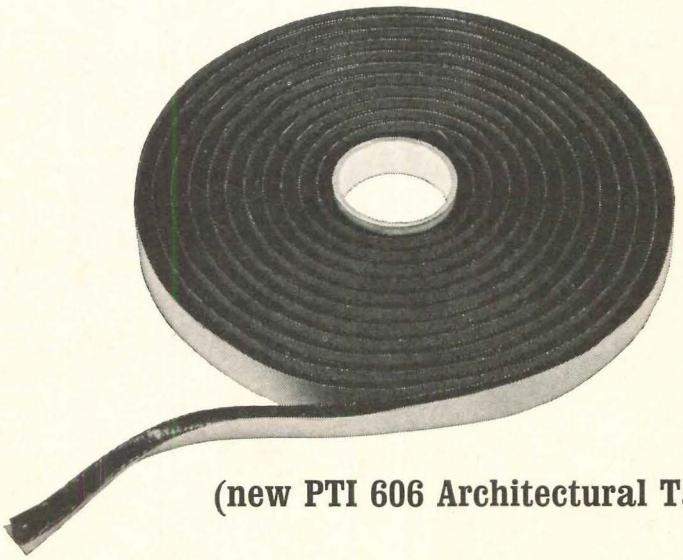

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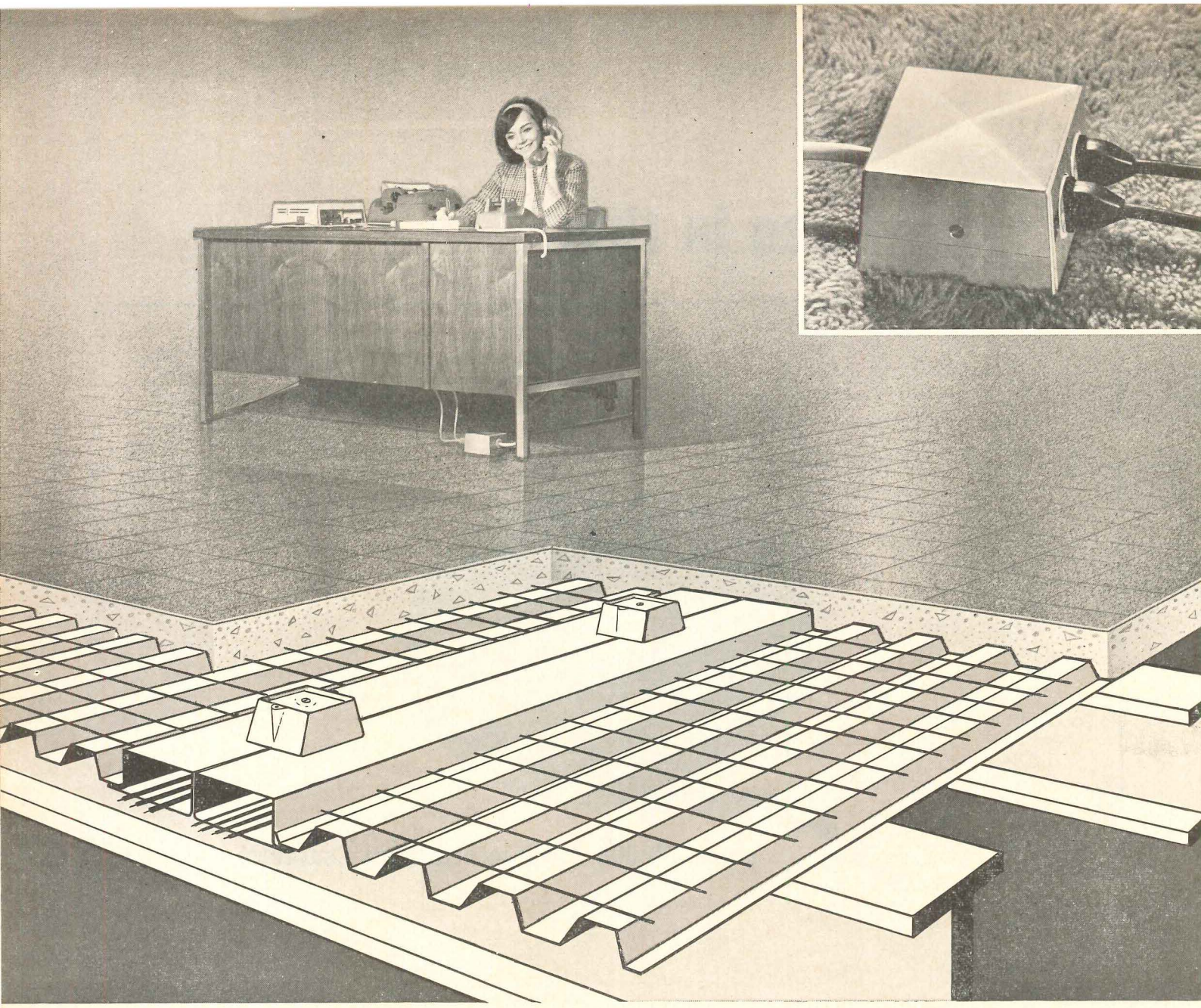

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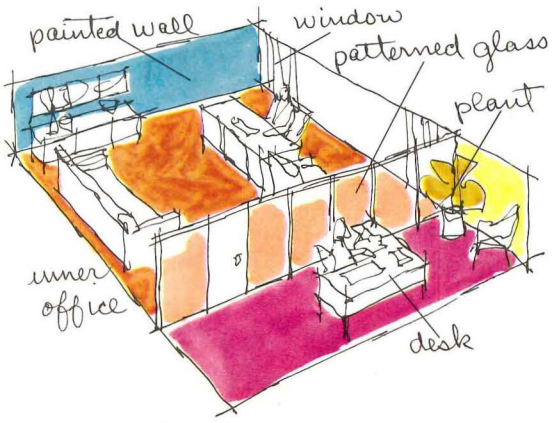

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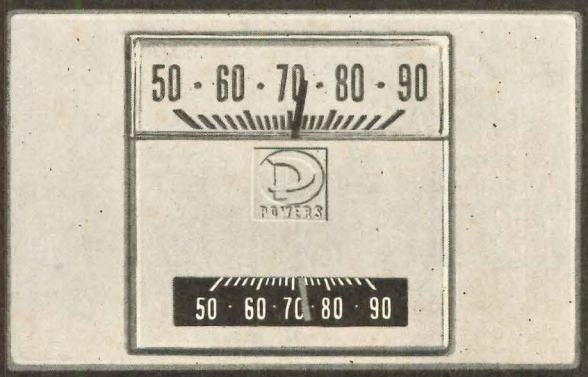

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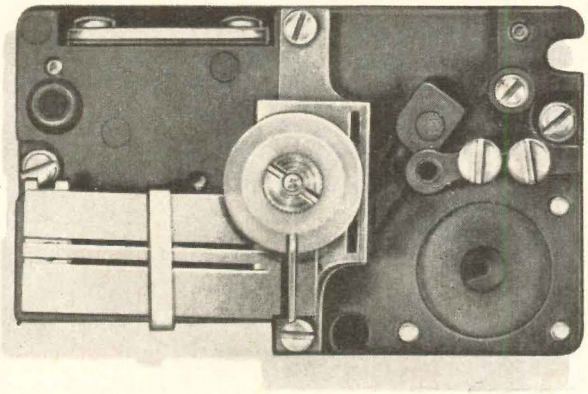

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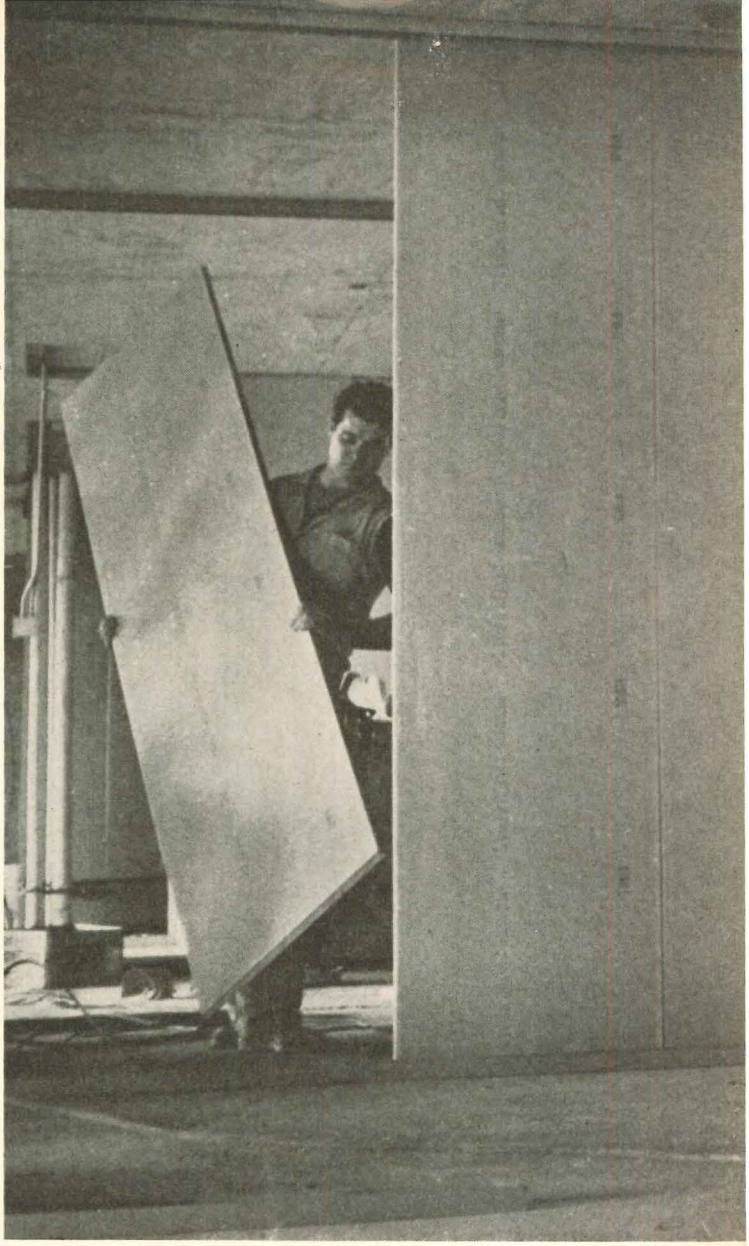

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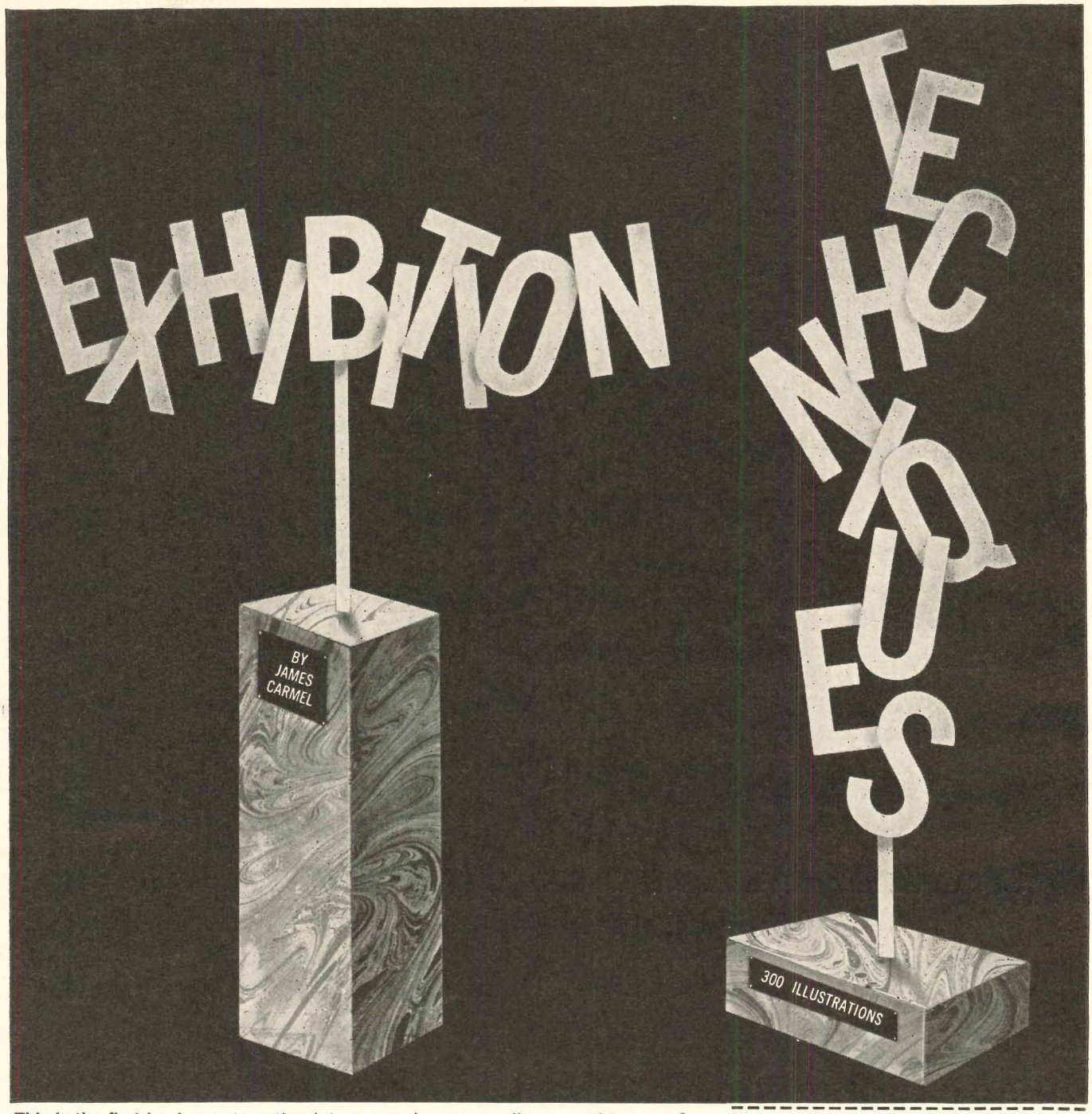

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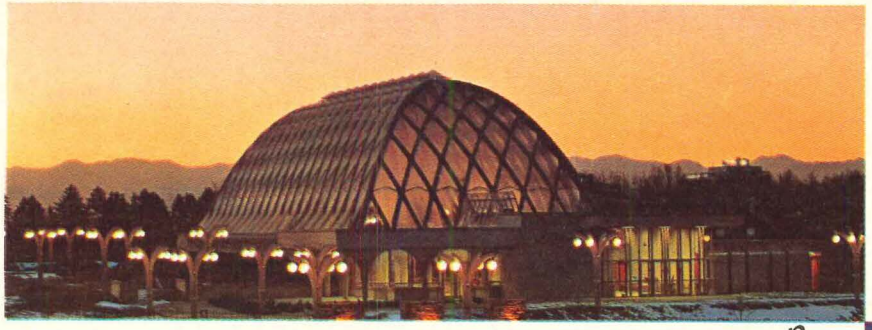

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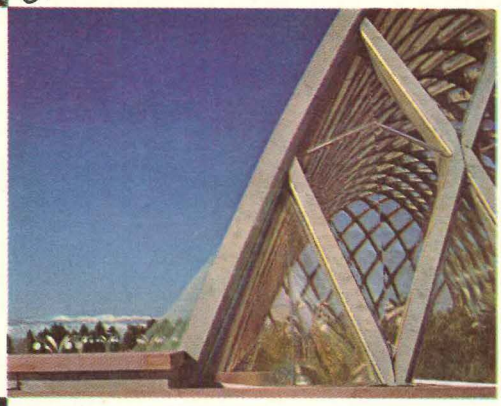

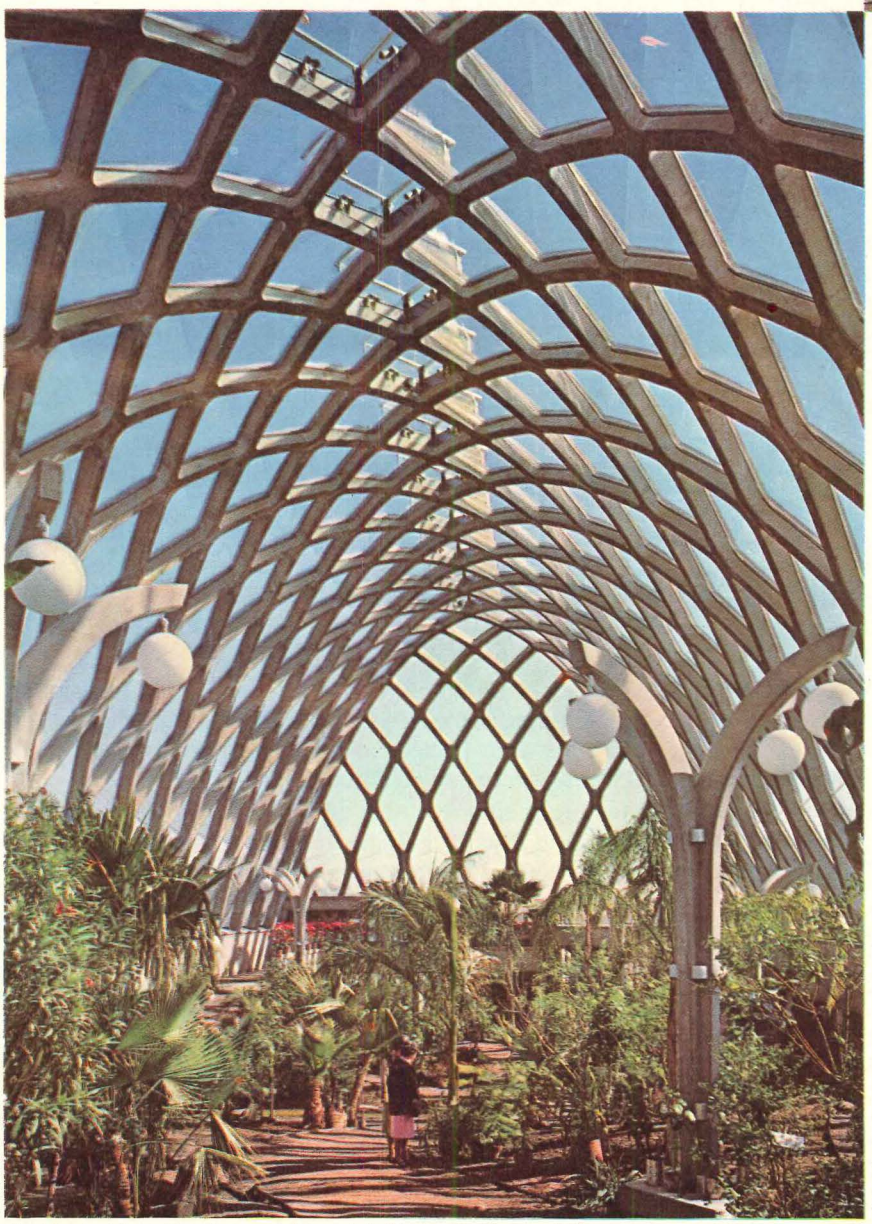

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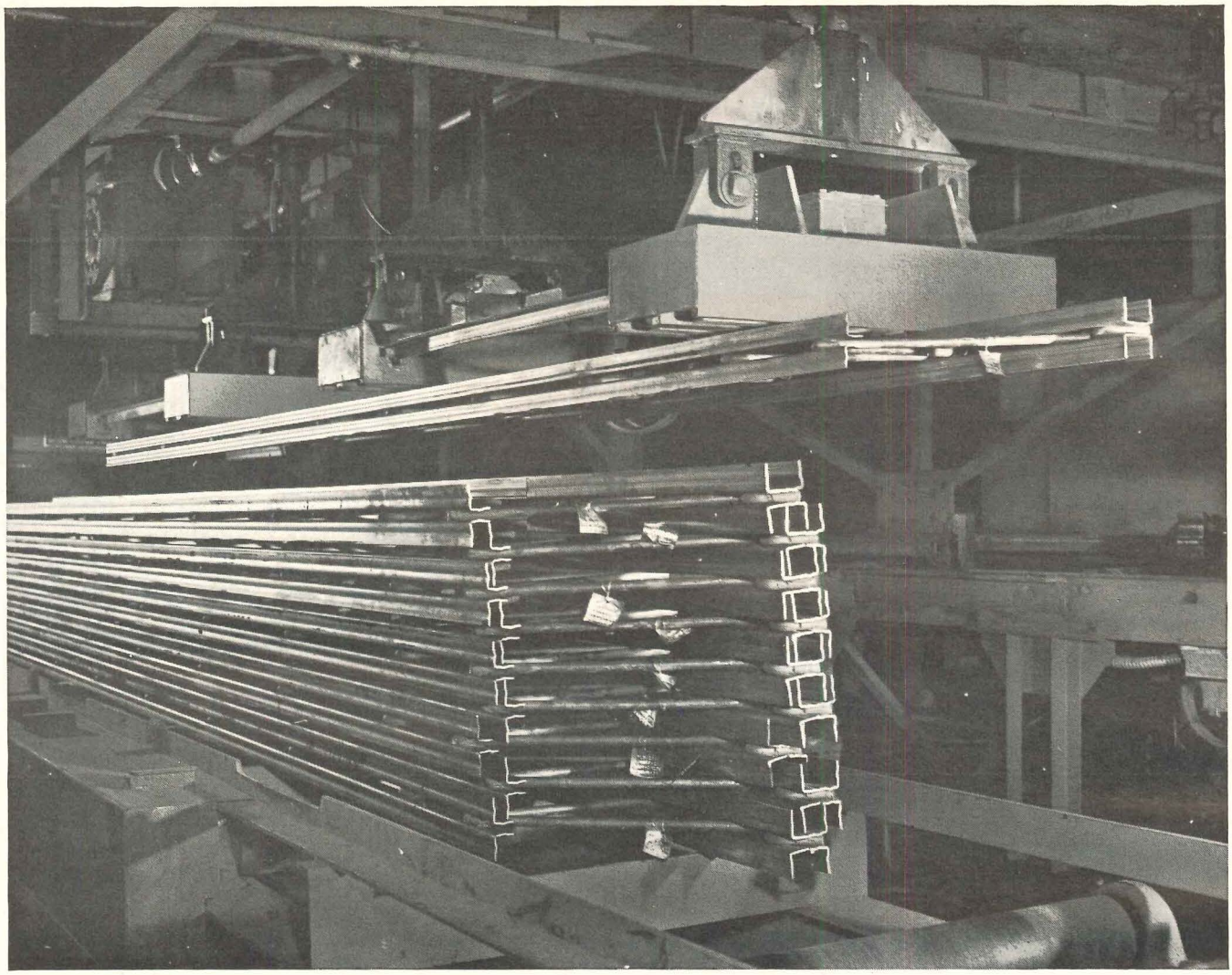

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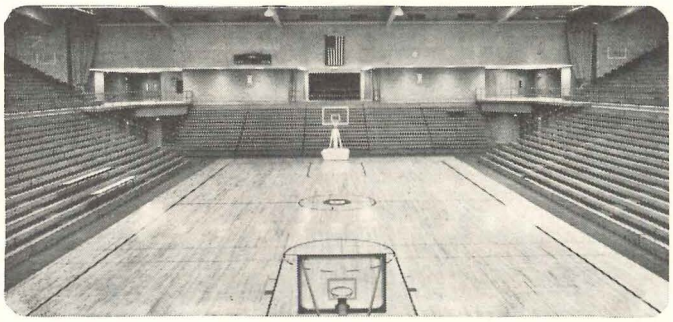

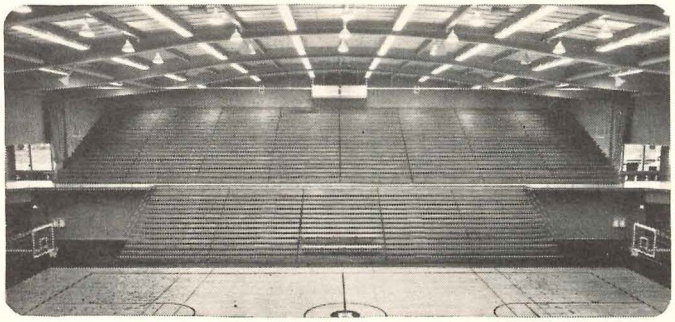

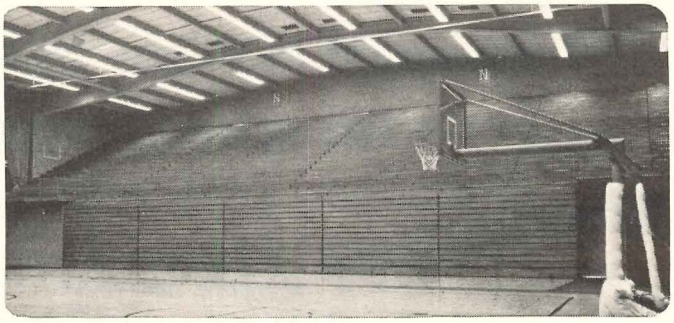

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JAMESTOWN, NEW YORK

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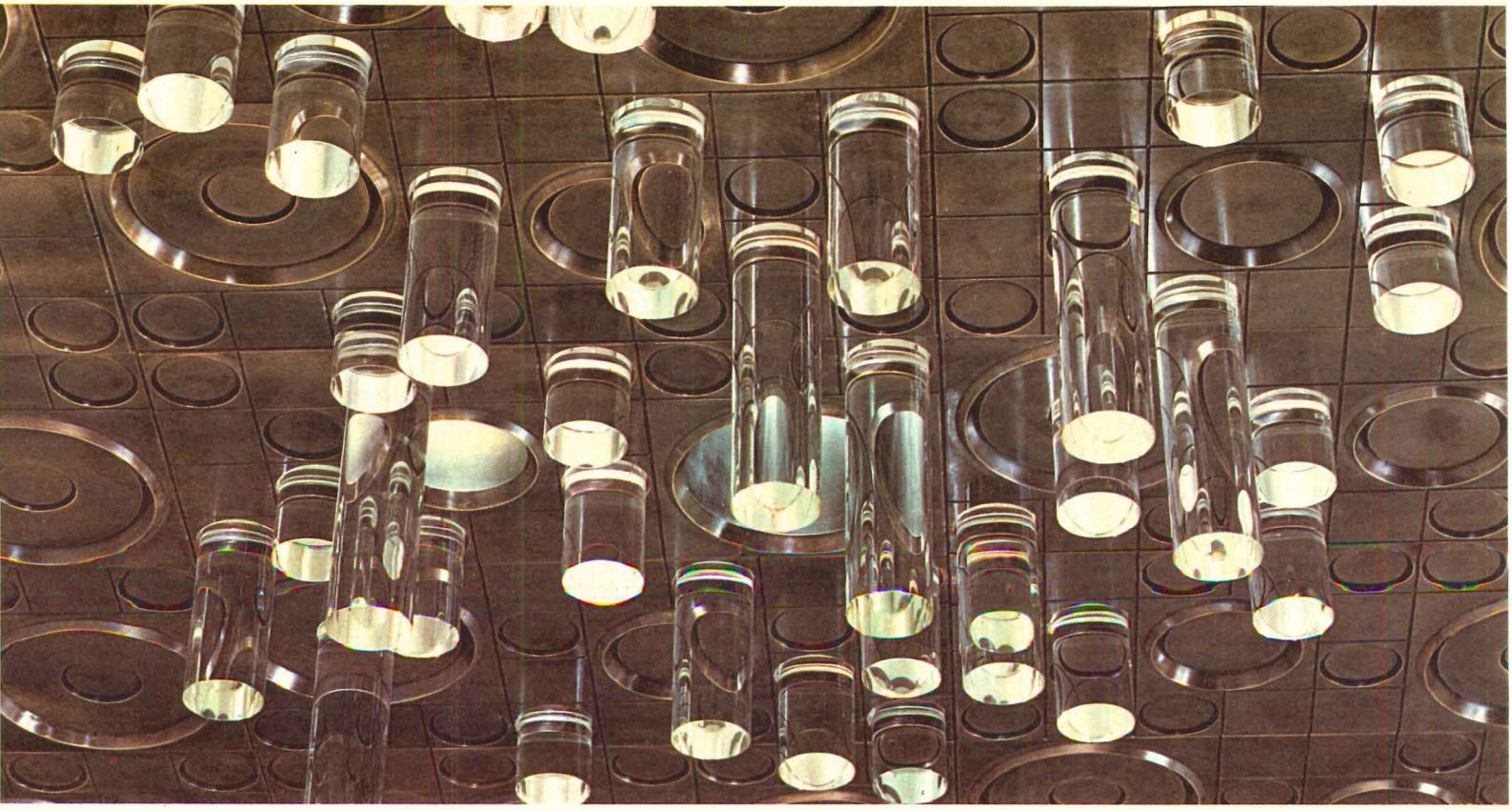
this is a lighted ceiling



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INTEGRATED CEILINGS, INC.

Casting a new light on architecture

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Continued from page 198

The reader is allowed only a short time to relax, and then he is introduced to pneumatic membranes supported only by air pressure, sometimes restrained by cables, taking breath-taking forms. However, these membranes do not necessarily have to be inflated by air. They may also be internally loaded by a variety of materials, such as water, soil, grain, etc. Consequently, they create containers for liquids, even shaping large dams, and can expand to structures retaining earth, like walls.

There seems to be no doubt that these membranes, fabricated from plastic or vinyl materials, sometimes reinforced with glass or steel, will revolutionize the construction of the future. The lack of bending stiffness of membranes will mold the shape of structure more and more to the forms they take naturally in order to resist their loadings. It is surprising how interesting and how beautiful these shapes are, and they are certain to have an impact on modern architectural expression.

The second chapter, on structures in compression, is short and still seems to elude Otto's firm grasp. There are two additional chapters, one on retractable roofs, a subject becoming more and more interesting because of the urgent need for open and closed stadiums in this country.

The final chapter describes large-scale envelopes, which seem to be something for the future, and might be of interest to the coming generation. These gigantic plastic covers shelter industrial centers and cities, thereby improving their climatic conditions.

The book is extremely valuable because of its beautiful photographs, but more especially because of the reprints of Frei Otto's study sketches, which reflect the enormous amount of intensive work he has done, aimed at exhausting all possible variations of a specific idea. This series of sketches should be stimulating for any architect or engineer searching for truth and perfection in design.

BOOK NOTES

ACI Book of Standards. American Concrete Institute, P.O. Box 4754, Redford Station, Detroit, Mich., 1965. 536 pp.

Includes two new standards: "Recommended Practice for Selecting Proportions for No-Slump Concrete," and "Recommended Practice for Evaluation of Compression Test Results of Field Concrete."

Continued on page 220

Increasingly popular split block . . . made with Medusa . . . the original White Portland Cement . . . lends a special charm to this colonial style TV station in the "old South."

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A close-up view of split block in WAGA-TV. Each block measures 2¼"x 3⅝"x15⅝"

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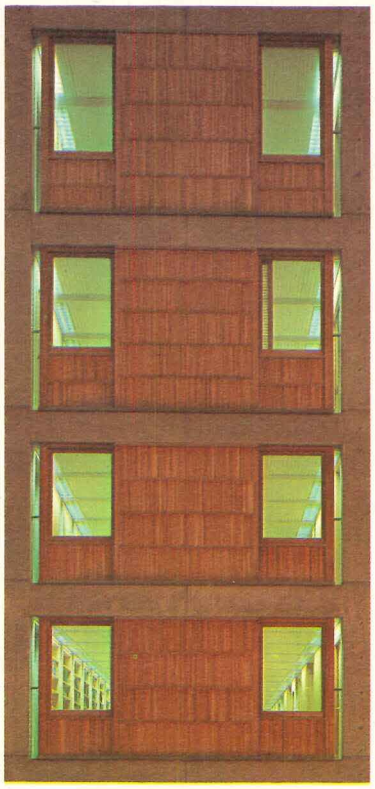
Salk Institute for Biological Studies
La Jolla, California

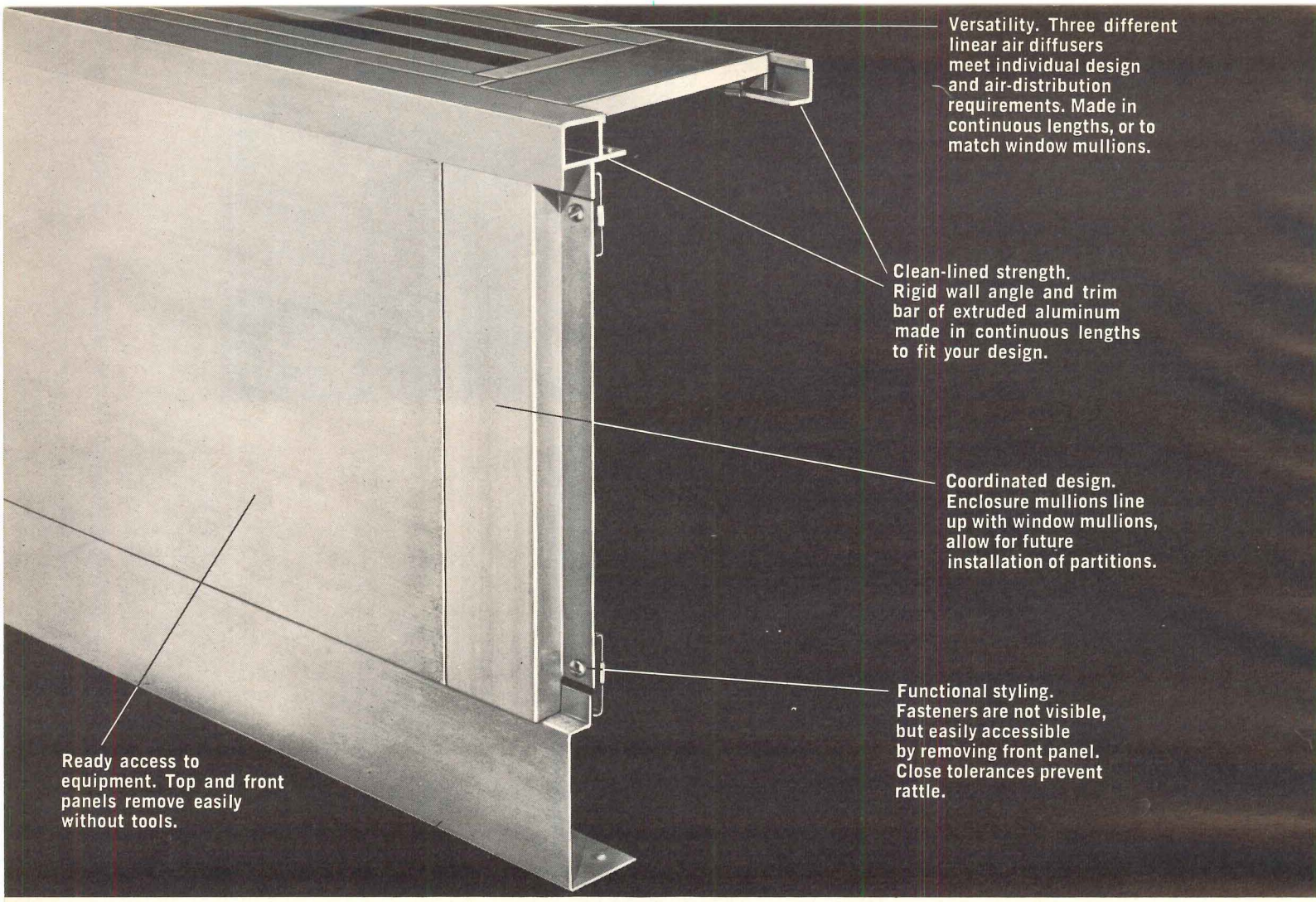
Architect: Louis I. Kahn



Powerful new laboratory looks seaward through ASG's Starlux plate glass

Salk Institute is a vigorous and orderly composition of powerful forms. Built on a headland overlooking the Pacific, it is richly textured without, austerely functional within. The architect has skillfully combined rugged, exposed concrete, weathered steel, mellow teak wood, and 50,000 square feet of ASG's Starlux® twin-ground plate glass. ☐ Large single lights of Starlux have been used to glaze the Institute's angular, semi-detached study towers (opposite page), where they bring in natural illumination and give each study a view toward the ocean. Similar lights, set in wooden sliding windows, open the exterior of the Institute's two main wings. In these three-story wings, runs of Starlux up to 240-feet long (upper left) enclose laboratory areas. They help relieve the mass of concrete and transmit reflected daylight to work areas. ☐ Your ASG distributor can show you the luster and visual fidelity which make Starlux the perfect glass for large-area glazing. It's ASG's premier product, precision twin-ground and polished in the most modern plate glass plant in the country. For more information on Starlux, write: Dept. E-5, American Saint Gobain Corporation, P.O. Box 929, Kingsport, Tennessee 37662.

Starlux twin-ground plate glass by... ASG CREATIVE IDEAS IN GLASS



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FACTORY AND GENERAL OFFICE, SAN ANGELO, TEXAS

Continued from page 214

The Architectural Index for 1965. Edited and published by Ervin J. Bell, Architect. The Architectural Index, P.O. Box 945, Sausalito, Calif. $6.

In addition to *P/A*, Bell's indexes *Architectural and Engineering News, Architectural Forum, Architectural Record, AIA Journal, Arts and Architecture, House and Home,* and *Interiors.* Articles are cross-indexed under building type, geographic location, architect or designer, and materials and methods of construction. Back issues to 1950 are available; binders holding up to six issues cost $4.50.

ASTM Standards: 1966 Book. American Society for Testing and Materials, 1916 Race St., Philadelphia, Pa. 25,000 pp. 3700 Standards in 32 parts.

Beauty For America, Proceedings of the White House Conference on Natural Beauty. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 1965. 782 pp., $2.75.

The British Building Industry: Four Studies in Response and Resistance to Change. By Marion Bowley. Cambridge University Press, 32 E. 57 St., New York, N.Y., 1966. 488 pp., $13.50.

The first three stories of this book concern the problems of the introduction and exploitation of innovations in structures and in methods of building and design. The most interesting study, the last one, discusses the relations between owners, designers, and builders.

Building Code Commentary. American Concrete Institute. P.O. Box 4754, Redford Station, Detroit, Mich. 1965. $2.

"Commentary" gives the rationale and applications of the provisions of the latest ACI Building Code.

Emerging Techniques of Architectural Practice. A research Study by the Architectural Engineering Dept. at Penn. State University. The AIA, 1735 New York Ave., N.W., Washington, D.C., 1966. $2 (members) $3 (nonmembers).

Reports on existing and emerging techniques, technologies, and procedures being used by architectural offices to increase the efficiency of their practice.

Environmental Case Study—The Effect of Windowless Classrooms on Small School Children. C. Theodore Larson. Publications Distribution Service, University of Michigan, Ann Arbor, Michigan, 1966. 112 pp., $2. (paperbound)

The study concluded that children learn equally well in windowed and windowless classrooms.

Fire Protection Handbook. Twelfth Edition. National Fire Protection Association, 60 Batterymarch St., Boston, Mass., 1965. 216 pp., $17.50.

From the Classicists to the Impressionists: A Documentary History of Art and Architecture in the Nineteenth Century. Selected and Edited by Elizabeth Gilmore Holt. Doubleday & Co., Inc., 277 Park Ave., New York, N.Y., 1966. 552 pp., illus., $1.95 (paperbound).

Contains the theoretical and practical writings of the artists, architects, critics, city planners, and others of the 19th Century that provide the background to the artistic

Continued on page 224

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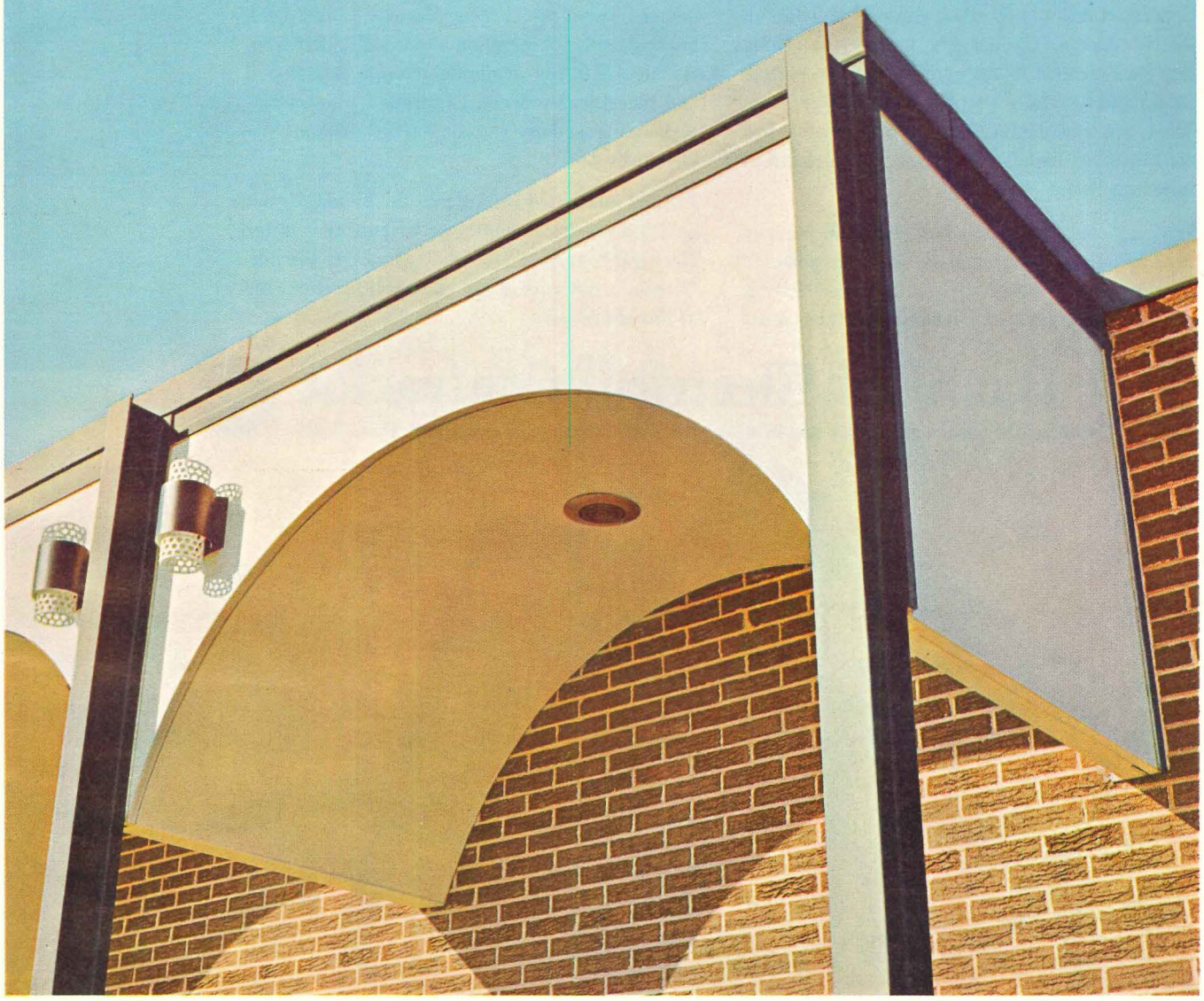

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Architects: Sandstedt-Knoop-Yarbro, Oshkosh.

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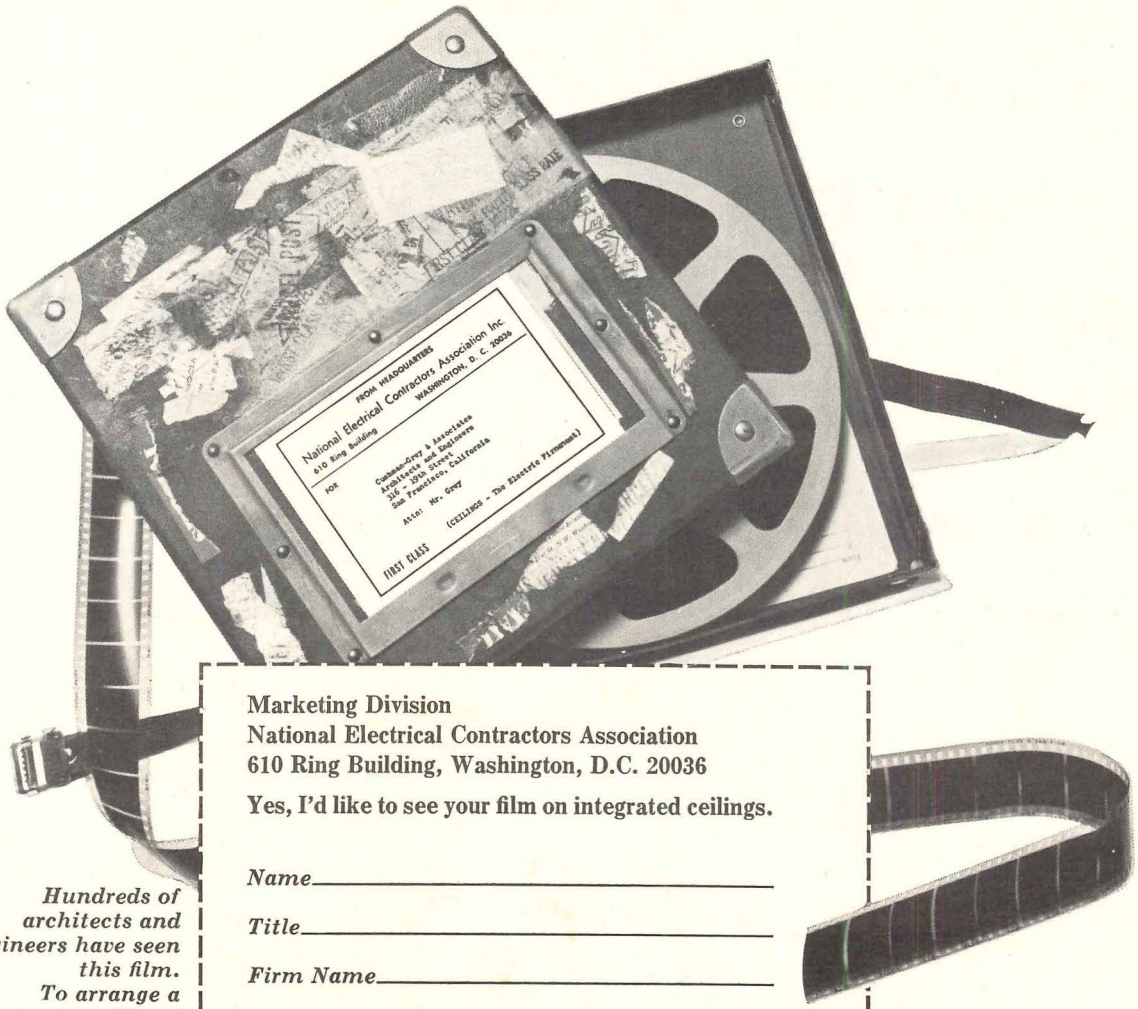

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life of the time.

The Galveston That Was. By Howard Barnstone. Photographs by Henri Cartier-Bresson and Ezra Stoller. MacMillan Publishing Co., 60 Fifth Ave., New York, N.Y., 1965. 224 pp., illus., $12.95.

Excellent photographs and fine text describe the architecture and social life of Galveston's finest years.

Government Programs for Community Development, A Guide to Government Assistance Programs for Housing, Neighborhood Facilities and Job Training. By Linda Perlis and John M. Bailey, Jr. The Architects' Renewal Committee in Harlem (ARCH), 306 Lenox Ave., New York, N.Y., 1966. 65 pp., $1.50.

Handbook of Foamed Plastics. Edited by René J. Bender. Lake Publishing Corp., 311 E. Park Ave., Libertyville, Ill., 1965. 339 pp., $14.50.

How To Build a $20,000 House for $59,000. By William Woolway. The Stephen Greene Press, Brattleboro, Vermont, 1963. Illus., $3.95.

Written by an artist, and dedicated to the architect and contractor who built his house and, he hopes, will "come back some day and fix the leak in the kitchen roof." this brief book is all pictures and short captions—its purpose being to make fun of real-estate agents, and the aforesaid two persons. An inconsequential, though delightful, spoof.

Hannes Meyer: Buildings, Projects and Writings. By Claude Schnaidt. Architectural Book Publishing Co., 151 E. 50 St., New York, N.Y., 1965. 123 pp., illus., $16.50.

Claude Schnaidt never knew Hannes Meyer, the passionate, idealistic Director of the Bauhaus who, succeeding Gropius and appointed by him, ruined the venerable Dessau school (some say). He held to a functionalist aesthetic that went to the extreme of proclaiming that "life is oxygen plus sugar plus starch plus protein." That Schnaidt never knew him is perhaps the reason why this book, the only one on Meyer, is slightly dull and probably does not give a complete picture of him.

NOTICES

New Branch Offices

DANIEL, MANN, JOHNSON & MENDENHALL, Architects, Engineers, and Planners, have a new office for the San Francisco area in Redwood City, Calif.

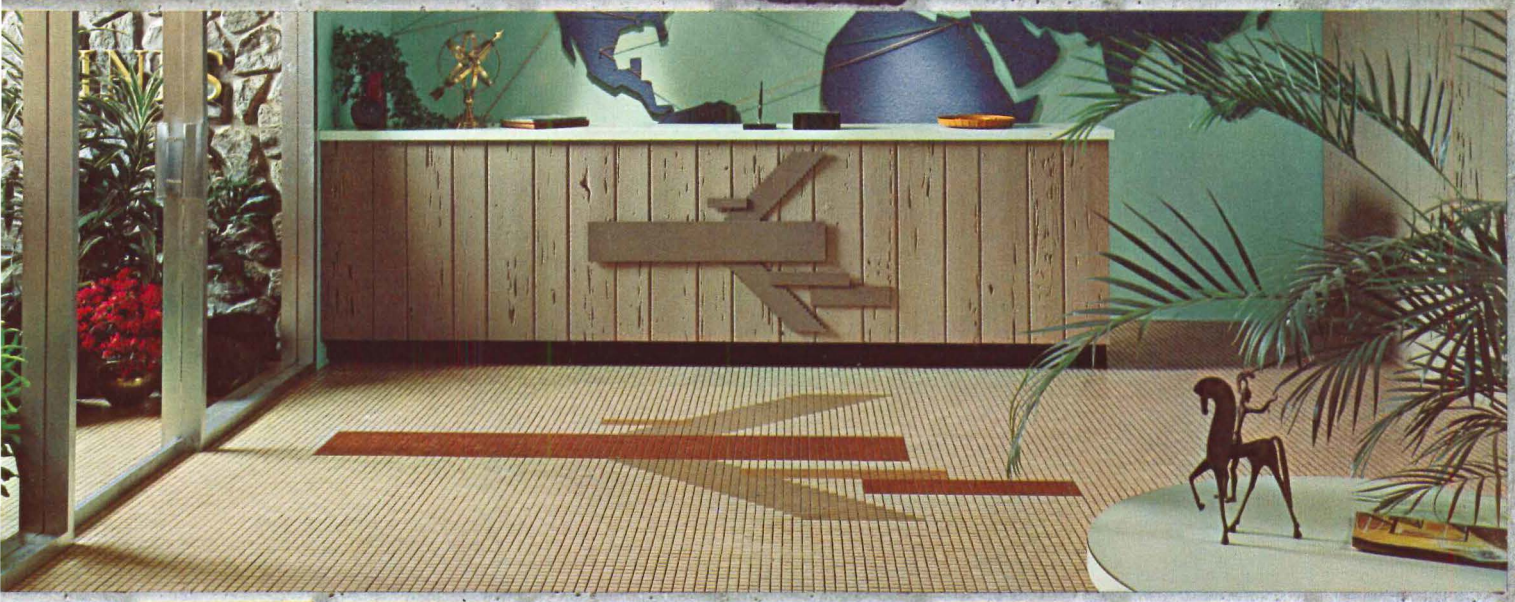
DAVERMAN ASSOCIATES, INC., Architects, Engineers, and Planners, now have a second Wisconsin office at 1900 University Ave., Madison, Wis.

JOHN CARL WARNECKE & ASSOCIATES, Architects and Planners, have a new office at 350 Park Ave., New York, N.Y.

New Addresses

JOHN BARTLETT & ASSOCIATES, Architects and Planners, 731 Garfield Ave., Alhambra, Calif.

Continued on page 233



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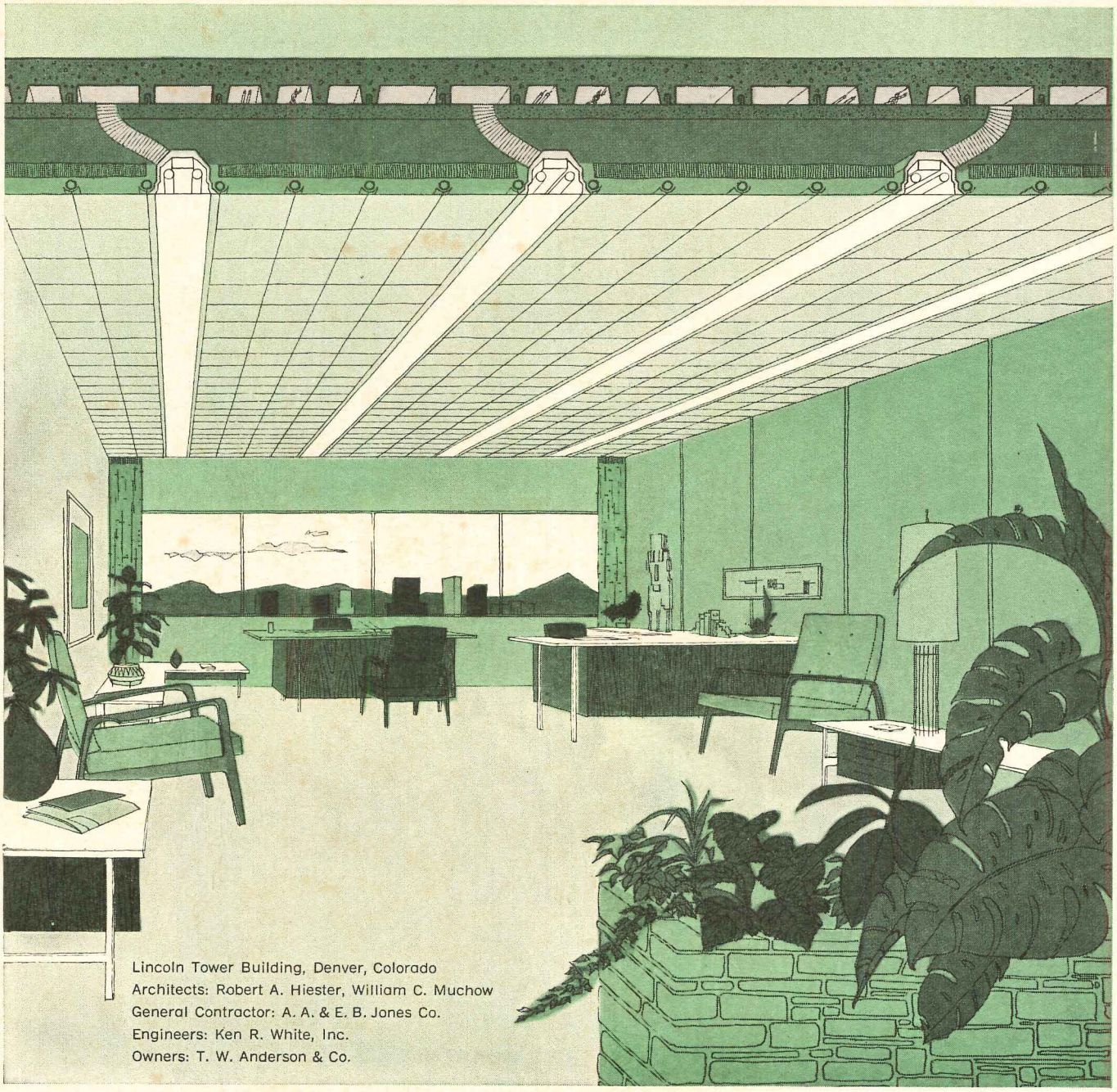

Lincoln Tower Building, Denver, Colorado
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Continued from page 224

CROW, LEWIS & WICK, Architects, 150 Broadway New York, N.Y.

MARR & MARR, Architects, 100 W. Seven Mile Rd., Detroit, Mich.

OTTO PAUL POTICHA, Architect, 756 W. Park St., Eugene, Ore.

SHRIVER & HOLLAND, Architects, Professional Arts Bldg., Norfolk, Va.

EDGAR TAFEL, Architect, 74 Fifth Ave., New York, N.Y.

HARRY WEESE & ASSOCIATES, Architects and Engineers, 10 W. Hubbard St., Chicago, Ill.

WILDERMUTH & BONE, Architects, 2655 Whippoorwill, Portage, Ind.

New Firms

CHESAPEAKE DRILLING COMPANY, Soil and Foundation Consultants, 2200 Ellen Ave., Baltimore, Md.

COLLINS & COLLINS, Architects, Hardy Bldg., P.O. Box 718, Gulfport, Miss.

DARDICK & ASSOCIATES, Urban Planning and Design Consultants, St. Louis, Mo.

PETER ELSE, Architect, 102 Pierce St. at Maple, Birmingham, Mich.

ROBERT K. GRUBB, Architect, 960 N. San Antonio Rd., Los Altos, Calif.

JOHNSON SUSTRONK WEINSTEIN & ASSOC., LTD., Consultants in Landscape Architecture, Civil Engineering, Urban and Regional Planning, 123 Scollard St., Toronto 5, Ontario, Canada.

WALTER KACIK DESIGN ASSOCIATES, 433 E. 51st St., New York, N.Y.

AXEL KAUFMANN, Architect, 137 Newbury St., Boston, Mass.

SICARD-LAFLEUR & ASSOC., Architects, Maritime Bldg., 203 Carondelet St., New Orleans, La.

THOMPSON & UDING, Architects, 1216 S. Crescent Ave., Park Ridge, Ill.

New Partners, Associates

DANIEL, MANN, JOHNSON & MENDENHALL, Architects, Engineers and Planners, Los Angeles and Honolulu, have named JACK C. LIPMAN an Associate for Architecture, and FREDERICK K. F. LEE an Associate for Planning and Engineering; CHARLES T. BLAIR has been appointed Vice-President of the new San Francisco office.

PHOTO CREDITS

The Ell Student Center

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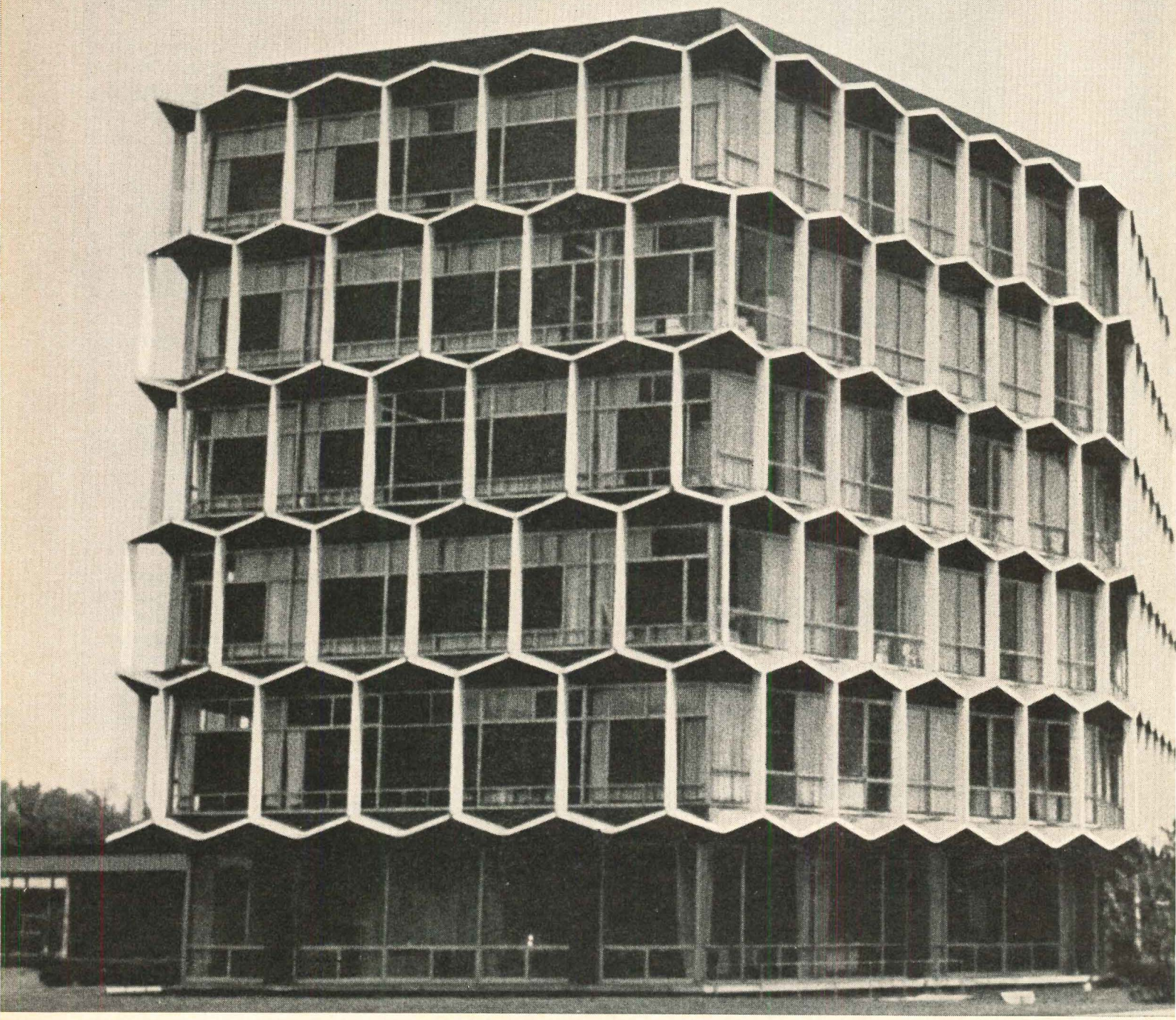

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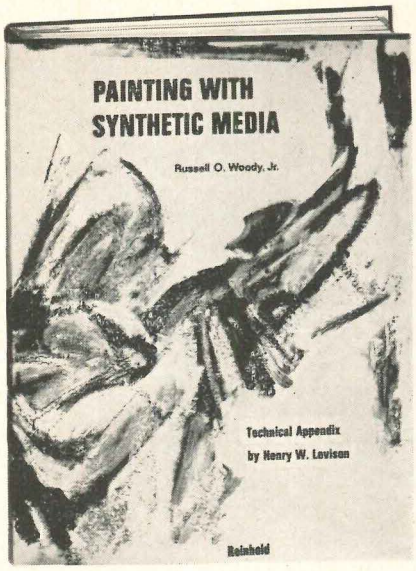
*Time Magazine, October 16, 1964



How synthetic media can give your work new range and power

From oil and tempera to piled impastos and transparent washes, this book shows how you can achieve endless effects with this miracle media. How you can create new dimensions in color and texture with a minimum of material preparation. How you can add versatility to every technique: oil, watercolor, tempera and casein, mixed media, textural painting and collage, mural painting, printing, sculpture, and commercial art.

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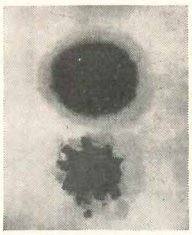
Illustrated with the work of famous artists

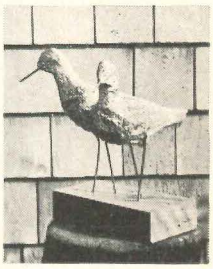
To prove how versatile this new media is, the author spent a year interviewing famous painters all over the country who use synthetic paints. He found out exactly what they think of them, and how they work with them. Reproductions of their work, many in color, are included along with detailed explanation of the techniques used. Among the many artists whom the author talked to before writing this book are: Thomas Hart Benton, Elaine de Kooning, James Brooks, Robert Goodnough, Boris Artzybasheff, Robert Weaver, Robert Motherwell, Adolph Gottlieb, Helen Frankenthaler.

Included in this book is a special technical section by Henry W. Levison, a widely respected authority on the chemistry of artists' colors, which provides more precise explanations of the nature and testing of synthetic media.



Adolph Gottlieb used the acrylic resin, Lucite, mixed with oil paint and turpentine to create PETALOID, the painting shown above.

GREATER YELLOW LEGS, a sculpture created by Alfred H. Melenbacker was made from polymer cement, a mixture of four parts Portland cement, one part polyvinyl acetate emulsion, and enough water to make the combination workable.



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13 miles of copper plumbing* save time... save costs... save space...

*70,000 ft. of Anaconda Copper Tube in sizes ½" thru 6".

Model of Life of Georgia Tower, Atlanta. Architects: Bodin & Lamberson, Atlanta. Associate Architects: Eggers & Higgins, New York City. General Contractor: Daniel Construction Company of Georgia, Atlanta. Engineers: Brewer & Mundy, Charles F. Howe, Atlanta. Associate Engineers: Syska & Hennessy, New York. Plumbing, heating, airconditioning and ventilating: Sam P. Wallace & Co. and the Huffman & Wolfe Co. Anaconda Distributor: Atlas Supply Co., Atlanta.

The firm of Brewer & Mundy had good reason for specifying copper plumbing for this 29-story, 414,200 sq. ft. area building soon to add new beauty to Atlanta's skyline. ■ It is lighter, easier and faster to work with, so installation costs are less. ■ Copper tube and the compact fittings can be placed in areas where other piping would be too bulky and cumbersome. This advantage, if used in the engineering stages, often results in construction economies and more useable space.

The engineering firm also pointed out that "dependability" was probably the most important reason for recommending copper. In multistory buildings, repairs to the plumbing system are difficult and costly work. ■ Copper eliminates the possibility of rust-caused trouble in future years, and solder connections, tube to fittings, are superior to threaded joints for leak-proof joints.

Above is one of many majestic structures, completed or in progress, whose owners will benefit from copper plumbing. Their architects and engineers know that to effect speed, space and labor-saving economies, it pays in the early planning to specify copper . . . Anaconda copper.

Anaconda plumbing products include Copper Water Tube, Copper DWV Drainage Tube, Copper Tube Fittings and Valves, Red Brass and Copper Pipe. For further information, write: Anaconda American Brass Company, Waterbury, Connecticut 06720. In Canada: Anaconda American Brass, Limited, Ontario.

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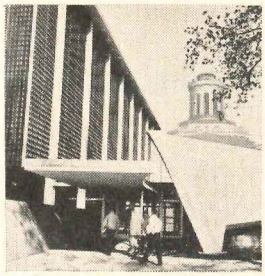

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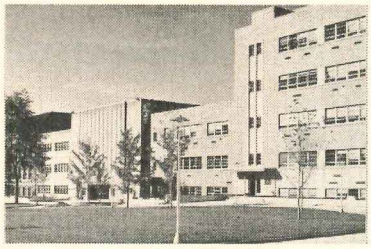

Case Institute of Technology
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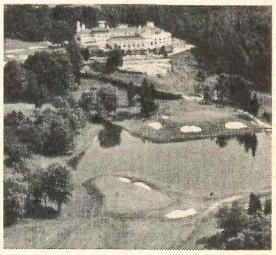

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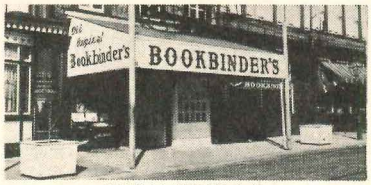

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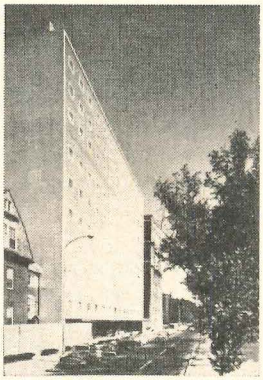

Hospital of the University
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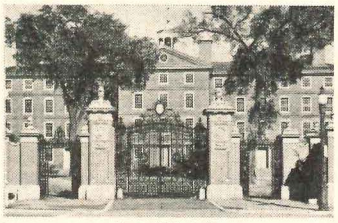

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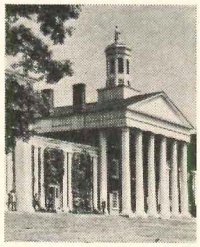

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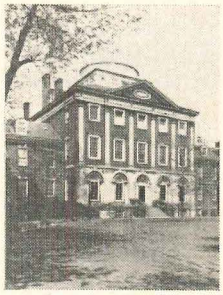

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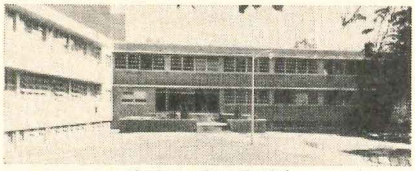
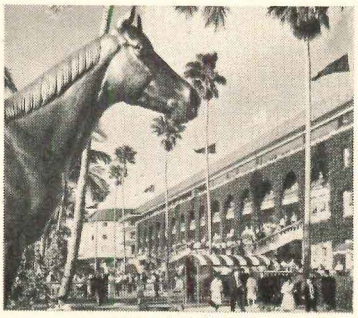


Norristown State Hospital
Norristown, Pennsylvania



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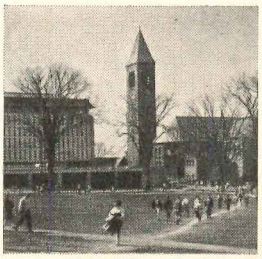

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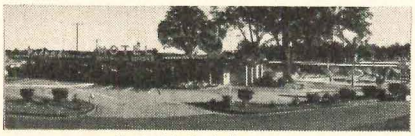

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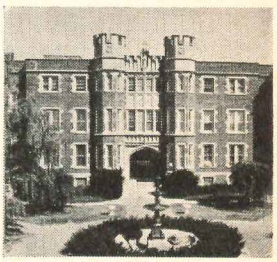

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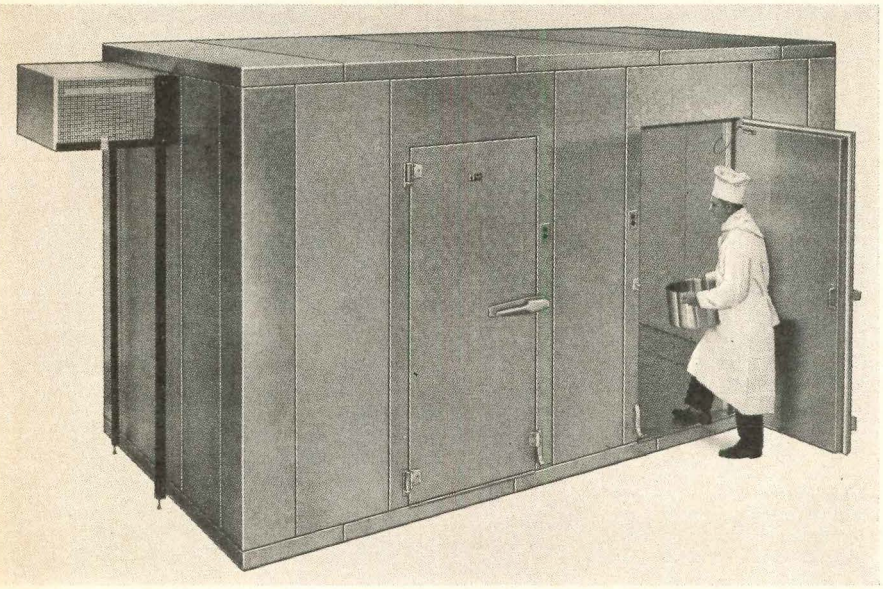

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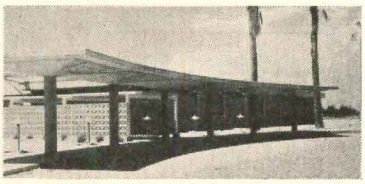

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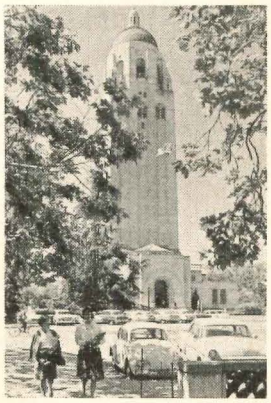

Stanford University
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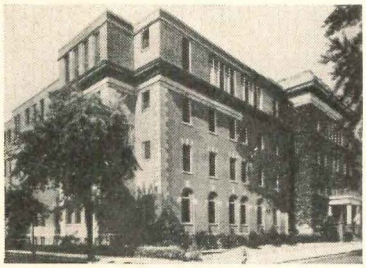

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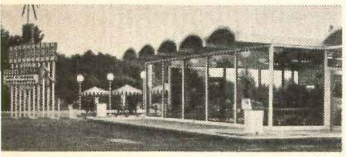

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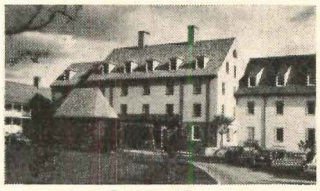

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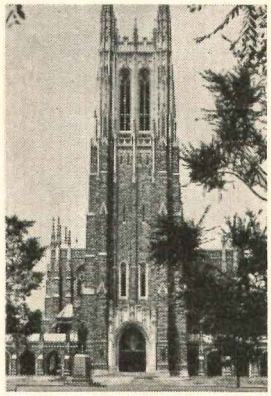

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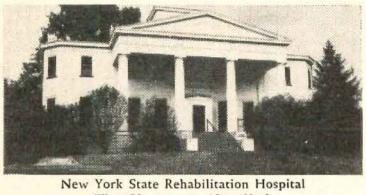
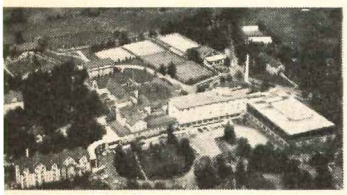


New York State Rehabilitation Hospital
West Haverstraw, New York



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JOBS AND MEN

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ARCHITECT—Small progressing and progressive Boston office needs person—minimum 3 years experience—prefer well-rounded person—technical abilities and interests important—advancement opportunities—desire registration potential but effective certificate not necessary. Box #231, PROGRESSIVE ARCHITECTURE.

ARCHITECT—With a minimum of five years practical experience for responsible position with long established, 30 years, firm whose preference is contemporary architecture. Permanent employment for right man, fringe benefits, excellent living conditions in progressive growing community, excellent schools, and vacation spots. Reply to Louis G. Hesselden, Architect, Post Office Box 803, Albuquerque, New Mexico.

ARCHITECT II—$186.00-$223.25 weekly depending on qualifications. Assists in preparing designs, plans and specs for new or renovating municipal buildings; prepares cost estimates and related architectural work. Requires license as Architect (Connecticut) or eligibility and experience in architectural planning and design. Further details by writing E.J. O'Brien, Director of Personnel, City of Hartford, 550 Main St., Hartford, Connecticut.

ARCHITECT—Designer Draftsmen—Our medium size (14) office engages in a diversified practice ranging from residential, church, school and industrial work. We are looking for responsible, conscientious people interested in helping us produce work of high quality in Colorado, as well as other states. We live in a progressive growing community with unexcelled climate and recreational facilities in near by mountains. Opportunities are here for profit sharing, growth and stimulating work with a young organization. Please submit complete resume as soon as possible. Lusk & Wallace, 121 East Vermijo, Colorado Springs, Colorado 80902.

ARCHITECTS—Established firm in Maryland with varied, large practice has permanent key positions for designer to work directly with partner and for experienced draftsmen to develop working drawings. Current projects include educational, medical, ecclesiastical, residential and office facilities. Address replies to Box #232, PROGRESSIVE ARCHITECTURE.

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ARCHITECTURAL—Designers-Draftsmen. Well established, progressive, growing architectural firm has immediate openings for top quality, experienced designers & draftsmen. Degree & registration preferred. Career opportunities with excellent medical, vacation benefits, top salaries, profit sharing. Send complete confidential resume or phone collect 541-3300. SCHUTTE, PHILLIPS, MOCHON, 11121 West Oklahoma Ave., Milwaukee, Wis. 53227.

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ARCHITECTURAL DRAFTSMAN — Permanent position for man with experience in production of working drawings. Salary and advancement commensurate with ability. Benefits and challenging work in progressive office. Submit resume of experience to: Tannenbaum, Koehnen & Demeter, Architects & Engineers, 5822 W. Fond du Lac Ave., Milwaukee, Wis. 53218.

ARCHITECTURAL DRAFTSMAN — Progressive firm doing institutional work on international basis desires ambitious draftsman. Degree preferred. Minimum 2 years experience. Permanent position. Career advancement. Excellent working conditions. Benefit program. Send resume, salary, and sample print of drafting ability. Gordon A. Friesen Associates, Inc., 1145 19th Street, N.W., Washington, D.C.

ARCHITECTURAL ENGINEER—Office Planning—International petroleum corporation located Southwestern US seeks experienced planning, layout, design, budget, EDP engineer graduate. Salary commensurate with ability, experience. Inquire in strict confidence without obligation to LARRY T. BROOKS, INC., International Consultant for Engineer, Science and Executive Recruitment, Box 3933 Utica Square Tulsa Oklahoma USA 74157.

ASSISTANT CITY ARCHITECT — $205.00-$246.00 weekly depending on qualifications. Supervises and participates in preparing preliminary and final plans, cost estimates, and contracts for design and alteration of municipal buildings, requires license as Architect (Connecticut) or eligibility. Considerable experience in architectural planning and design including supervisory or administrative experience. Further details by writing E.J. O'Brien, Director of Personnel, City of Hartford, 550 Main St., Hartford, Connecticut.

EXPERIENCED ARCHITECT — Graduate with at least 10 years experience in institutional, industrial or commercial buildings. New or recent graduate in architecture, or architectural engineering, or planning. An Equal Opportunity Employer. Please send resume outlining education and experience to Box #234, PROGRESSIVE ARCHITECTURE.

INTERIOR DESIGNER — We need a highly creative, competent individual with ability to understand and translate clients' requirements into meaningful, appropriate and exciting design concepts. This person must be of proven ability with desire to take part in the growth of an established, progressive office planning and design firm. Our people know of this Ad. All replies confidential. Send resume to Box #235, PROGRESSIVE ARCHITECTURE.

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Continued on page 243

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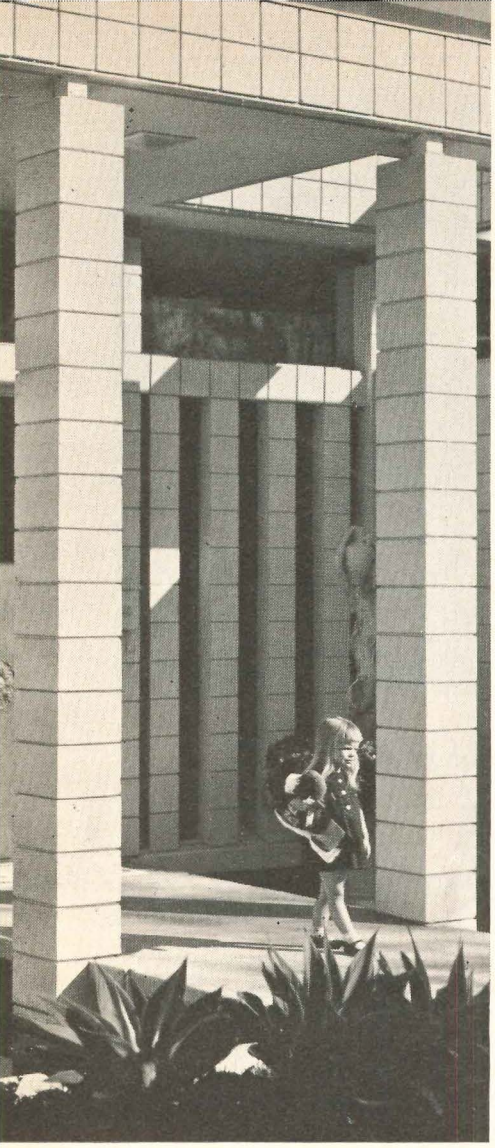

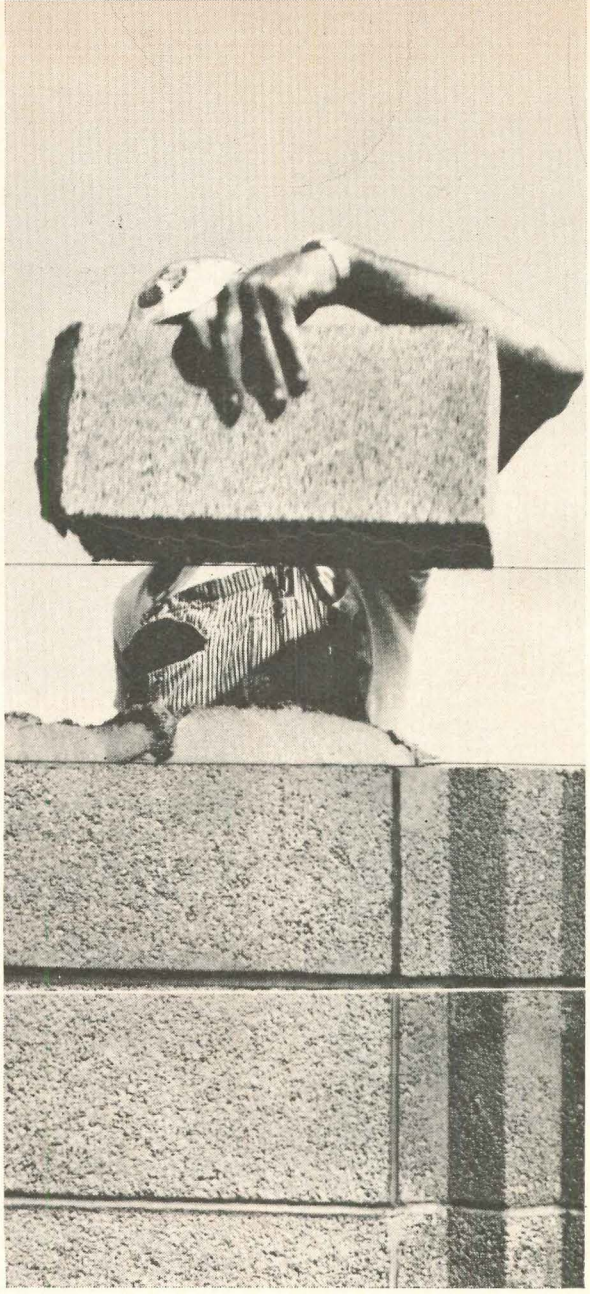

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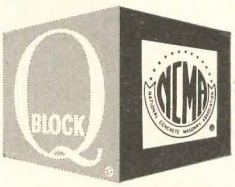

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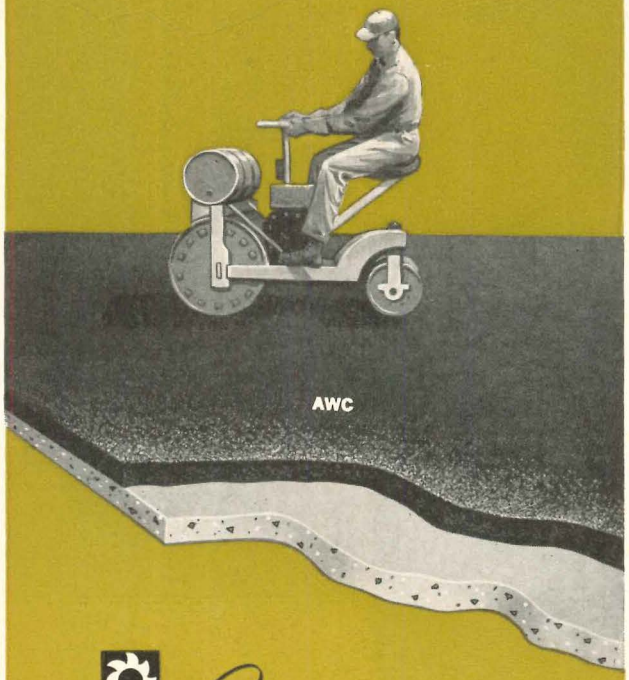

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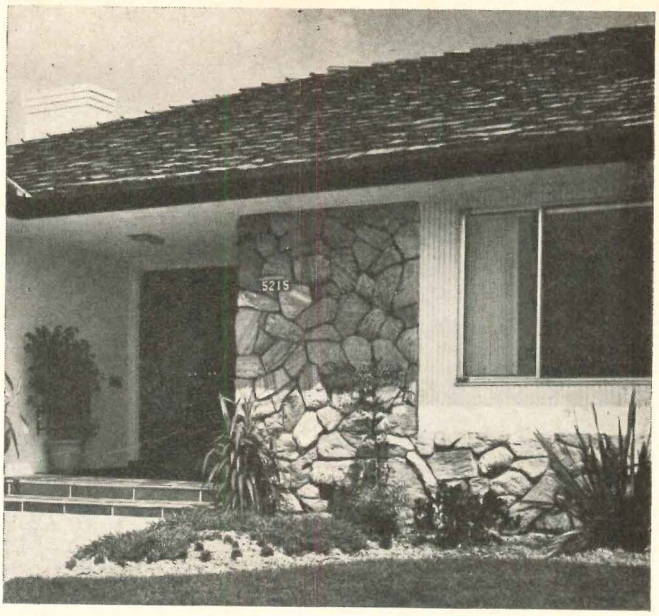

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P/A JOBS AND MEN

Continued from page 240

SITUATIONS WANTED

ARCHITECT—Arch. Degree, NCARB, AIA, registration by examination. Thirteen years experience in all phases including client contact, preliminary design, working drawings, specification writing and supervision of construction. Age 37—family. Desires to associate with small progressive firm in Rocky Mountain or West Coast area. Resume upon request. Box #238, PROGRESSIVE ARCHITECTURE.

ARCHITECT—B Arch degree, Age 25, 3 years varied experience plus graduate study, desires position with Architectural/Engineering Organization doing architectural work in economically undeveloped areas Latin America, Central/South east Asia. Undertake any facet architectural process, anxious to travel. Currently in New York. Box #239, PROGRESSIVE ARCHITECTURE.

ARCHITECT—Degree, graduate work, New York registration, 7 years experience. Designer and project manager in large and small offices. Experienced in design varied types of projects. Age 30, married. Desires challenging and responsible position in North west or Midwest for late summer. Box #240, PROGRESSIVE ARCHITECTURE.

ARCHITECT—Degree, married, 10 years experience in the United States and abroad, project leader on industrial, commercial, scientific and institutional work, coordinator on English language projects with European architects, seeks permanent, responsible position with American firm in Europe on long range programs. Working knowledge German and Spanish. Box #241, PROGRESSIVE ARCHITECTURE.

ARCHITECT—European degree, NCARB & RIBA exam. 25 years experience in all phases of practice including considerable experience in construction supervision—seeks responsible position overseas, or a stateside position leading to overseas assignments. Working knowledge of French, German, some Spanish. Detailed brochure available. Box #242, PROGRESSIVE ARCHITECTURE.

ARCHITECT—NCARB, age 35, 9 years experience, 1 year as spec. writer. Past 5 years as project architect with leading firm in SW. Personally handled governmental, church, high rise apartment & office buildings. Present project $7,500,000 office complex. Desire position as project architect & possible overseas assignment. Box #243, PROGRESSIVE ARCHITECTURE.

ARCHITECT—NCARB, New York and Florida registration. Bach. Architecture, thirteen years diversified experience in all phases of the profession, including landscape architecture and interior design. Interested in challenging position with progressive firm in Manhattan or San Francisco Bay area. Resume and photo on request. Age 35, married. Box #244, PROGRESSIVE ARCHITECTURE.

ARCHITECT—New York registration, M Arch degree, Harvard. 8 years experience in internationally known offices. European experience. Desires responsible position with future association or partnership. Will consider any metropolitan center in the U.S. or Canada, will consider foreign assignment on a permanent basis. Box #245, PROGRESSIVE ARCHITECTURE.

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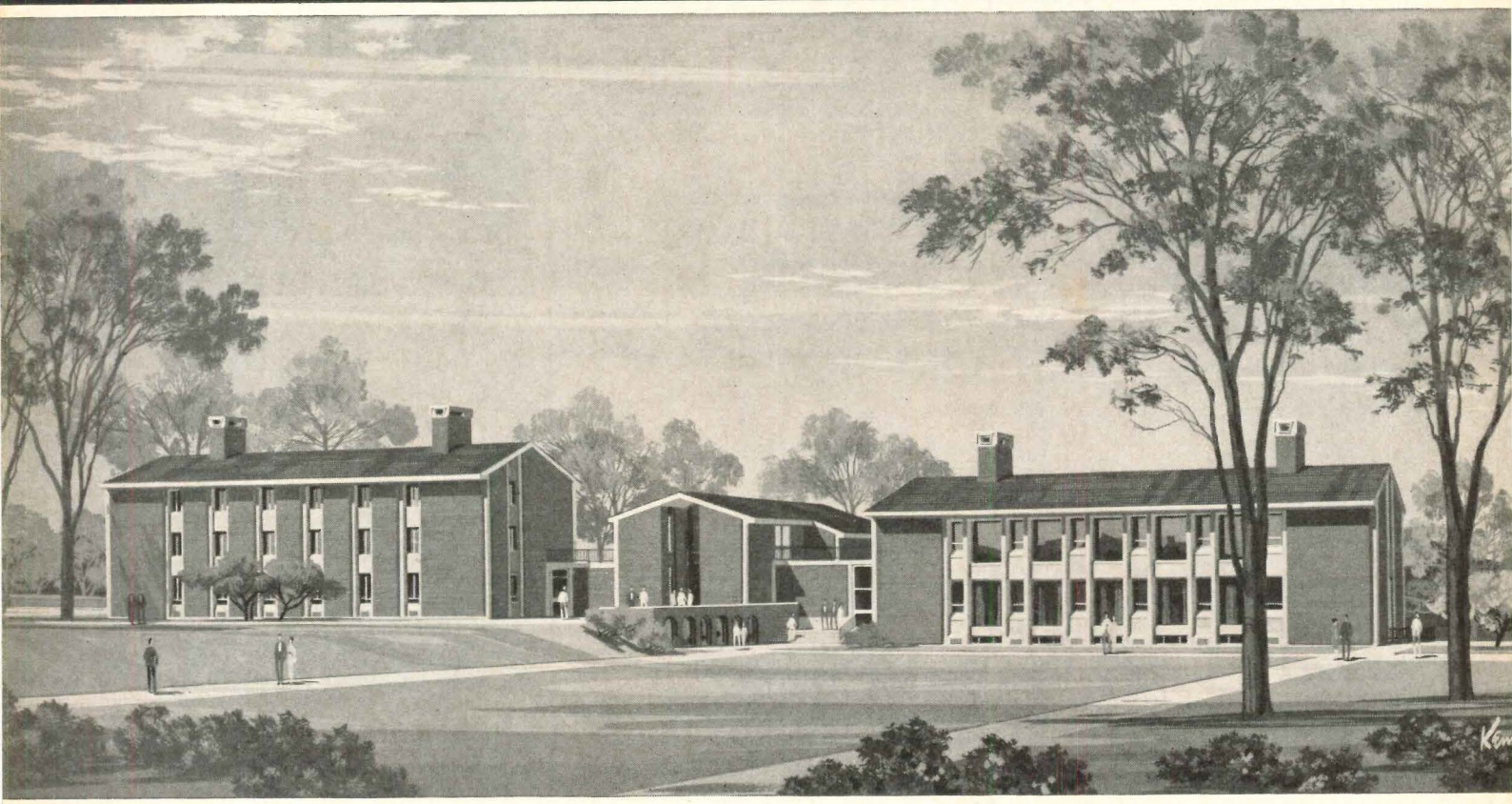

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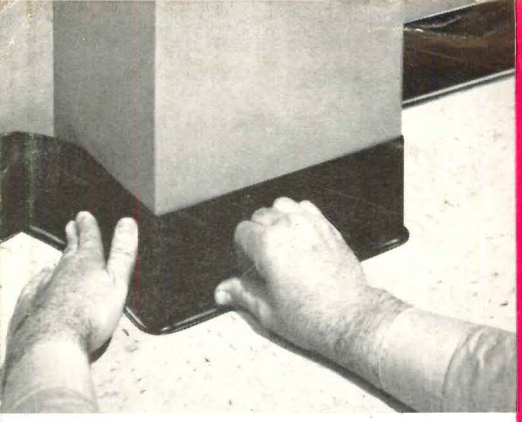

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